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**GROWTH MANAGEMENT ALTERNATIVES FOR
DOWNTOWN SAN FRANCISCO**

DOWNTOWN EIR CONSULTANT'S REPORT

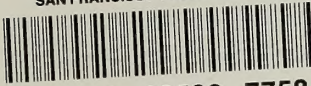
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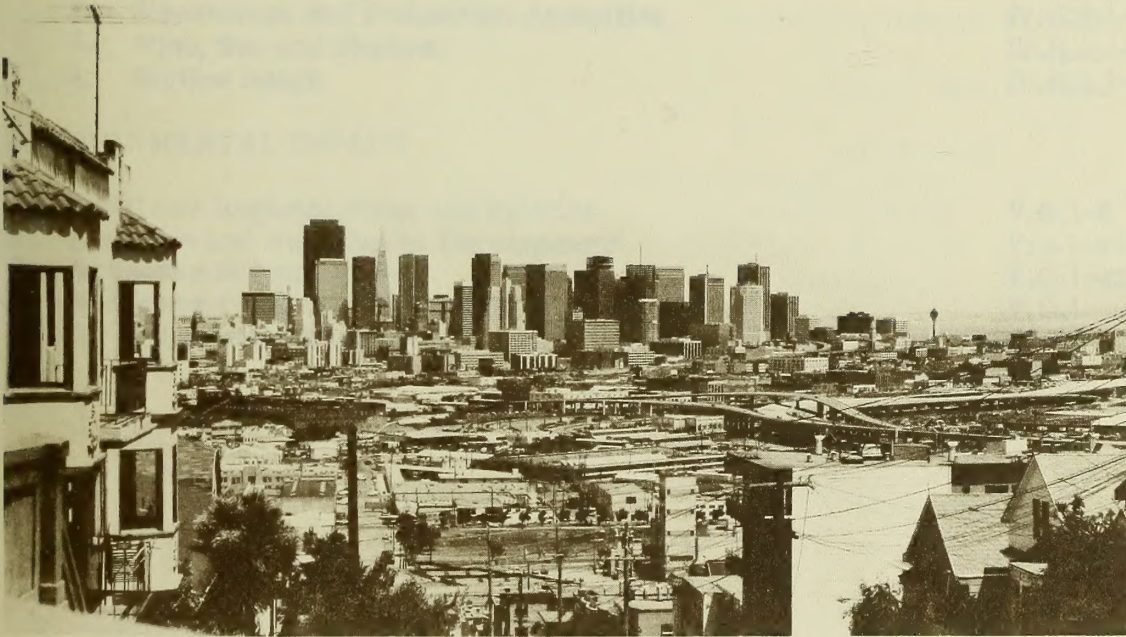


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I. SUMMARY

ABOUT THIS REPORT

Introduction

This report was prepared by Environmental Science Associates, Inc. (ESA), the consultants selected by the Downtown EIR Contract Monitoring Panel established pursuant to City Planning Commission Resolution No. 8735, adopted October 2, 1980.

The report is the first public product of the "Downtown EIR" study effort that began in early 1981. The report is a version of a partial preliminary environmental impact report (EIR) prepared by the consultant under a contractual scope of work approved by the City Planning Commission in September 1981. The partial preliminary EIR was submitted to the Department of City Planning in several stages from December 1982 to its completion in April 1983. Except for minor editorial clarifications and refinements, this report is identical to the partial preliminary EIR.

Throughout the period of report preparation, the Department of City Planning and its Office of Environmental Review have served as technical advisors to the Monitoring Panel. The Department has offered comments to the consultant and provided information during the preparation of this document, but has not evaluated or verified its contents. All material in this document is a product of the consultant and represents the consultant's judgment.

Although this report resembles an EIR in approach and format, it is not an "environmental document" in the meaning of the California Environmental Quality Act. It is therefore not subject to the provisions of the Act or its implementing guidelines. The report is a public informational document, however, and may be subject to incorporation by reference, in whole or in part, in subsequent environmental documents.

Alternatives

The report examines five basic alternatives (hereinafter, "Alternatives") for regulating future development in the Downtown Commercial use district of San Francisco, (C-3 District):

I. Summary

- Alternative 1 (the "Planning Code Alternative") consists of the C-3 District regulations, as described in the City Planning Code as it was applied prior to the implementation of "interim controls" in 1980.
- Alternative 2 (the "Chamber of Commerce Alternative") consists of the Recommended Growth Management Program presented in the Downtown Growth Management Program, prepared by Bolles Associates and Livingston & Associates for the San Francisco Chamber of Commerce in October 1979.
- Alternative 3 (the "Proposition 'O' Alternative") consists of the proposed initiative ordinance, Proposition "O", which was defeated by San Francisco voters in November 1979.
- Alternative 4 (the "SFRG Alternative") consists of four of a series of five initiative ordinances proposed in 1980 by San Franciscans for Reasonable Growth (SFRG). The four initiatives would have amended the C-3 District regulations of the City Planning Code had they appeared on the ballot and been approved in the November 1980 election.
- Alternative 5 (the "DCP Alternative") consists of the proposed development controls for the C-3 District presented in Guiding Downtown Development, issued by the Department of City Planning (DCP) in July 1982.

The Study Area

The C-3 District is the primary Study Area for this report (see Figure II.C.1). It occupies an irregularly shaped area of slightly more than one square mile (680 acres) in northeast San Francisco. The District contains the commercial core of the City and will include approximately 62 million gross sq. ft. (msf) of office space and about 41 msf of other uses by 1984.

Employment in the C-3 District in 1984 will consist of about 223,000 office jobs and about 56,000 other permanent jobs for a total of about 280,000 workers.

Format

The principal sections of the report are the following:

- Descriptions of Alternatives. As the title suggests, this section describes in detail the provisions of each of the five Alternatives.
- Environmental Setting. The Setting section establishes an analytical base case from data developed for the years 1981 and 1982, and on the basis of these data, forecasts the environmental setting of the C-3 District in 1984. The topical headings include local and regional plans, land use and real estate development, business and employment, housing, transportation and circulation, community services, and fiscal factors.
- Environmental Impact. From the 1984 setting, the environmental, urban design and economic effects of each Alternative are projected to the years 1990 and 2000 under each topical heading identified under Environmental Setting above.

The impact section examines the effects of each Alternative assuming each were implemented without regulatory ceilings on the rate of new commercial office development in the City.

- Mitigation Measures. The mitigation section examines measures for reducing the adverse environmental effects identified in the impact section. The measures include growth ceilings that would limit the annual rate of new office development in the City to 1.5 million sq. ft. (msf), 1.0 msf, and 0.5 msf.

ENVIRONMENTAL IMPACTS OF ALTERNATIVES

Land Use and Real Estate Development

Summary of C-3 District Development Forecasts To the Year 2000 (see Table I.1 and Figure I.1)

- Office buildings are the major use in the C-3 District; the large majority of the new development projected to occur between 1981 and 2000, in all Alternatives, is office space.
- The forecast of employment growth in the C-3 District (representing demand for space) indicates that all of the office space in projects under construction, approved, under formal review, and included in Yerba Buena Center (the pipeline projects) would not be absorbed until about 1990.
- Assuming the pipeline projects are built and that new C-3 District policies only affect subsequent development proposals, the Alternatives would not begin to affect C-3 District land use patterns until the pipeline projects are absorbed, in other words, until after 1990.
- From 1984 to 1990, the development of pipeline projects would increase total building space in the C-3 District by 12 percent and office space by 14 percent. During this period, office development would occur at an annual rate of about 1.6 msf per year. This is less than the annual average rate of new office construction 1981 to 1984 (2.5 msf per year).
- For all Alternatives, it is assumed that new development would occur according to the minimum required standards of each Alternative. No interim policies or non-specified discretionary review procedures are included in any of the Alternatives.

TABLE 1.1: SUMMARY OF C-3 DISTRICT SPACE BY USE AND SUBAREA

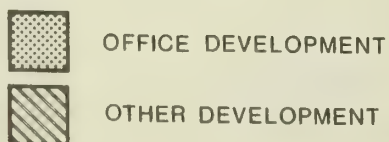
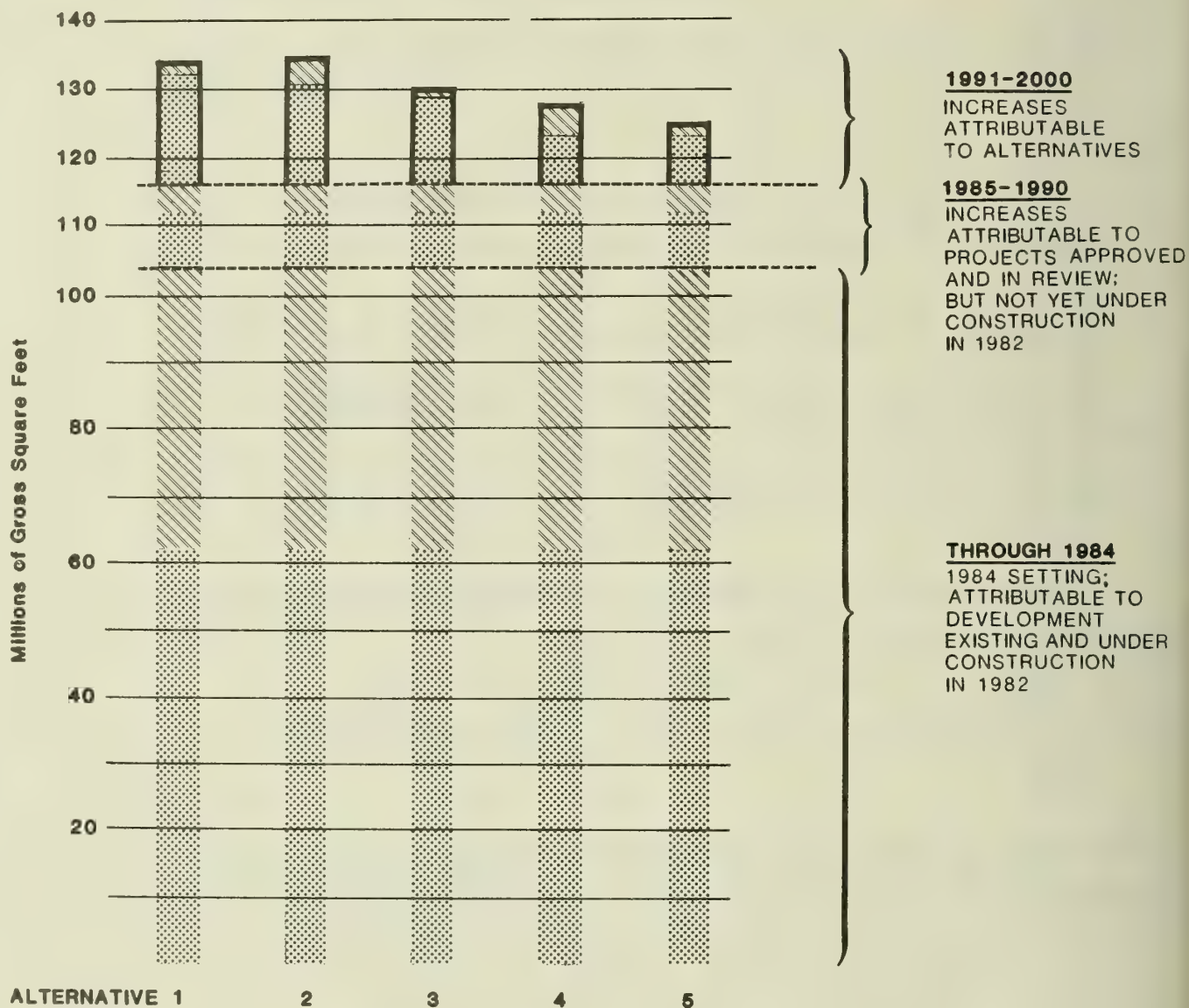
Use	1984		1990		2000									
	GSF	GSF	GSF	% Change From 1984	GSF By Alternative					% Change from 1990 By Alternative				
					1	2	3	4	5	1	2	3	4	5
Office	62,074	70,492	14	14	86,490	85,266	83,425	77,522	77,919	23	21	18	10	11
Retail	8,220	8,949	9	9	10,288	10,192	9,945	9,766	9,773	15	14	11	9	9
Transient Hotel	9,722	12,535	29	29	14,873	14,873	14,873	14,595	14,595	19	19	19	16	16
Residential Hotel	2,848	2,835	-1	-1	2,835	2,835	2,835	2,835	2,835	--	--	--	--	--
Housing	4,178	5,273	26	26	5,603	7,253	6,118	8,218	6,173	6	38	16	56	17
Cultural/Institutional/ Educational/Other	6,120	5,998	-2	-2	5,439	5,205	5,006	5,537	5,331	-9	-13	-17	-8	-11
Industrial/Warehouse/ Automotive	4,128	3,285	-20	-20	1,742	2,028	1,738	3,072	2,262	-47	-38	-47	-6	-31
Parking	6,258	6,423	3	3	5,819	5,823	5,834	6,112	5,974	-9	-9	-9	-5	-7
TOTAL	103,548	115,790	12	12	133,089	133,475	129,774	127,657	124,862	15	15	12	10	8
<hr/>														
Subarea														
1	49,222	55,496	13	13	64,582	64,014	62,321	61,786	60,197	16	15	12	11	8
2	6,385	7,275	14	14	9,576	9,572	8,847	8,102	8,317	32	32	22	11	14
3	7,749	8,271	7	7	9,331	9,723	9,306	9,245	8,663	13	18	13	12	5
4	6,009	6,009	--	--	6,459	6,589	6,630	6,419	6,189	7	10	10	7	3
5	17,816	19,640	10	10	21,868	22,219	21,855	21,432	21,195	11	13	11	9	8
6	12,486	15,007	20	20	16,710	16,666	16,408	16,141	15,919	11	11	9	8	6
7	3,881	4,092	5	5	4,563	4,692	4,407	4,532	4,382	12	15	8	11	7
TOTAL	103,548	115,790	12	12	133,089	133,475	129,774	127,657	124,862	15	15	12	10	8

NOTE: All numbers are rounded to nearest 1000 GSF

SOURCE: Reht Hausrath & Associates

**TOTAL C-3 DISTRICT
DEVELOPMENT**

PERIOD OF GROWTH



**FIGURE I.1:
C-3 DISTRICT DEVELOPMENT,
BY ALTERNATIVE, 2000**

SOURCE: Environmental Science Associates, Inc.

1. Summary

- After 1990, Alternatives 1 and 2 would result in the most development in the C-3 District. Alternatives 4 and 5 would result in the least amount of development. Alternative 3 would fall in the middle of this range. The increase in total building space from 1990 to 2000 would range from eight to 15 percent depending on the Alternative.
- There would be overall increases in the amount of total building space in all subareas of the C-3 District in all Alternatives.
- The differences among the Alternatives affect office development potential more than other new commercial development. The Alternative with the largest amount of office development 1990-2000 would have more than twice the net addition of the Alternative with the least amount. The total amount of office space in the C-3 District in the year 2000, however, would differ among Alternatives by about 10 percent. Only in Alternatives 1 and 2 would the forecast addition of office space, on an annualized basis, be as great as that reflected in the annual rate of office development occurring during the late 1970's and projected for the 1980's in the pipeline projects.
- Retail and transient hotel space would increase in all Alternatives. The differences in retail sales growth among Alternatives are not large. There would be very little difference among Alternatives in the amount of hotel space built.
- Residential development in the C-3 District would vary among Alternatives due to differences in housing requirements and incentives to produce housing. From 1990 to 2000, the forecasts vary from 300 to 3,500 housing units.

- The amount of space devoted to cultural/educational/institutional/other, industrial/warehouse/automotive, and to parking uses is projected to decline in the C-3 District under all Alternatives.
- All of the Alternatives have Transferable Development Rights (TDR) programs as an incentive for the retention of architectural resources. Generally, the policies of Alternatives 2 and 5 would be the most effective. The policies of Alternatives 1 and 3 would be the weakest.
- Considering the City as a whole, Alternatives 1 and 2 would result in only moderate amounts of office development outside the C-3 District by accommodating forecast demand within the downtown area. Alternative 3 would result in absorption of the available C-3 District sites at a faster pace and thus result in more office development outside of the District. The higher cost of development in Alternative 4 which would apply to development citywide, would result in little office development outside of the C-3 District. Compared to Alternative 4, much of the development that would not occur in the C-3 District under Alternative 5 could shift to other City locations depending on the policies for those areas.

Longer Term Perspective On Development

- Beyond the year 2000, it is likely that the difference in C-3 District development among Alternatives would narrow over time. There are several reasons for these changes. First, the higher growth Alternatives would eventually experience slower growth as portions of the C-3 District become fully developed. Second, development under the lower growth Alternatives could become more feasible in locations to which these Alternatives seek to redirect growth over time. Third, there could be less difference in long term economic growth to the extent that less growth in the shorter term resulted in an

enhanced environment over the long term that retains or attracts economic activity that would not otherwise occur in the C-3 District.

- Over the long term, the most change is likely to occur in the relative ranking of Alternative 5. Alternative 5 is likely to become more similar to Alternatives 1, 2, and 3 and less similar to Alternative 4 over time. Alternatives 1, 2, and 3 are likely to become more similar to each other. Less change is likely to occur in Alternative 4 relative to the other Alternatives.

Comparison of Alternatives: The Amount of Activity and Mix of Uses in C-3 District Subareas in the year 2000 (See Table I.2)

- Both the overall amount of activity and the mix of uses in each C-3 District subarea would be affected by the Alternatives. The relative degrees of change depend on the existing character of each subarea by 1990. The following conclusions reflect only forecast changes to the year 2000. Over the longer term there would be differences in the conclusions as there would be fewer development opportunities in the C-3 District core area under all Alternatives and demand pressure would build on available sites in outlying areas. The Alternatives would affect the magnitude and timing of longer term shifts in the C-3 District development pattern.
- In Subarea 1, there would be a relatively small change in character in all Alternatives. This is because the existing character of development (high-intensity office) is well-established. Alternatives 1 and 2 would result in the most changes (more office) while Alternative 5 would result in the least change.
- In Subarea 2, there would be a relatively great amount of change (primarily increased office development) in all Alternatives except Alternative 4. In addition to lower levels of

TABLE I.2; SUMMARY COMPARISON OF ALTERNATIVES FROM THE PERSPECTIVE OF C-3 DISTRICT PROPERTY OWNERS

Changes In Amount Of Real Estate Activity
And Mix Of Uses In C-3 District Subareas

<u>Subareas</u>	<u>Alternatives</u>				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1	B	B	C	C	E
2	A	A	B	E	B
3	B	B	A	E	D
4	C	C	B	E	D
5	B	B	A	E	C
6	A	A	B	D	E
7	B	B	B	C	D

Key: A = Most Change
E = Least Change

From The Perspective Of C-3 District Property Owners:

<u>Relative Effect of Alternatives On Land Values for:</u>	<u>Alternatives</u>				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
● Owners of development sites in present core area	A	B	C	D	E
● Owners of development sites bordering present core area	A	A	B	E	C
● Owners of development sites on periphery within C-3 District	B	B	A	E	D
<u>Relative Effect of Alternatives On Value of Existing Buildings for:</u>					
● Owners of smaller buildings (predominantly pre-1945)	A	A	C	D	D
● Owners of larger buildings (predominantly post-1945)	C	B	A	A	A
● Owners of sites with designated historic buildings	B	A	C	C	D

Key: A = Highest Values
E = Lowest Values

SOURCE: Recht Hausrath & Associates

new office development, Alternative 4 would result in minimal conversions of other uses in Subarea 2.

- Subarea 3 would undergo the most change in Alternative 3, as office development occurs in more outlying areas. There would be little change in Alternative 4.
- The potential for change in character is low in Subarea 4. Consequently, the differences between the Alternatives for this subarea would not be great.
- The lower density, south of Market Street portion of Subarea 5 would be affected most by the policies of the Alternatives. Rezoning in Alternatives 4 and 5 would reduce the potential change that could occur as evidenced by the development patterns under Alternatives 1 and 2.
- The potential for change is great for Subarea 6. The Alternatives with high levels of core area development (Alternatives 1 and 2) would result in higher levels of activity and more office activity in Subarea 6. Alternative 5, due to rezoning, would result in very little change in Subarea 6.
- The difference among the Alternatives is narrow in Subarea 7. Alternatives with larger amounts of development in the core area would result in pressures for change in Subarea 7.

Comparison of Alternatives from the Perspective of C-3 District Property Owners (see Table I.2)

- The impacts of the Alternatives on land value – the value of a site for development – are different from impacts on building value – the value of existing building space. Higher development costs and/or greater development restrictions will generally reduce the value gain from development and thus reduce the land value. The same factors will eventually

increase the value of existing buildings by decreasing the supply of new space and thus increasing rents.

- The specifics of development restrictions are important. Relatively restrictive development controls on specific sites or areas of the C-3 District usually diminish land values for these sites or areas, but increase land values elsewhere.
- Alternatives 1, 2 and 3 would generally result in higher land values, while Alternatives 4 and 5 would generally result in higher values for existing buildings.
- The owners of development sites in the present C-3 District core area (Subareas 1, 6 and 7) would have the most options for using their property in Alternatives 1 and 2. Their land values would be less in Alternative 3 because of the reduced amount of new high-rise development allowed. Alternatives 4 and 5 would be the most restrictive, with Alternative 5's rezoning having a greater effect on land values in specific locations in Subareas 1 and 6.
- The owners of development sites bordering the present core area (Subareas 2 and 5) would find their land values highest in Alternatives 1 and 2. In Alternative 2, these sites would be able to accommodate the spill-over demand due to reductions, primarily as a result of height restrictions, in the amount of new space supplied in the core area. The land value of these sites would be fairly high in Alternative 3 due to the general outward push of development. In Alternative 4, development on many of these sites (and hence land value) would be restricted due to zoning changes and reduced development potential associated with the relatively high costs of providing housing. In Alternative 5, these landowners would be relatively better off because of the prospects for development offered by demand that would not be accommodated in the core area.

- Land values for owners of development sites on the periphery of the C-3 District (Subareas 3 and 4) would be highest in Alternative 3, moderately high in Alternatives 1 and 2, and lowest in Alternative 4. These landowners would be somewhat better off in Alternative 5 because they would not face the costly housing requirement of Alternative 4.
- The owners of small buildings would find the greatest potential value from their property in Alternatives 1 and 2, where demolition and new development offer the most potential gain. The gains would be less in Alternative 3, due to the reduced size of new office buildings. Alternatives 4 and 5 would result in even greater reductions in the potential value gain from demolition and new development on these types of sites.
- The owners of large existing buildings would find the most increase in value in those Alternatives that place the most restrictions on new construction (Alternatives 3, 4 and 5). The rental value of existing buildings would be greatest in these Alternatives. These values would be somewhat lower in Alternative 2 and even lower in Alternative 1, associated with the amount of new office development with which larger existing buildings (which it would not be feasible to demolish) would have to compete.
- To owners of sites with designated historic buildings, the value of their property depends on the TDR programs of the Alternatives, as well as the factors that affect all other C-3 District sites. Alternative 2 offers the most incentives to retain historic buildings. Alternatives 4 and 5 offer the next most potential return for preservation, while the potential in Alternatives 1 and 3 is limited due to requirements that the new development project be close to the preservation site. Historic building sites could be redeveloped in Alternatives 1, 2, 3, and 4. Alternative 5 places the most restrictions on owners of many of these sites.

Business and Employment Forecasts

Summary of C-3 District Employment Forecasts to the Year 2000 (see Table I.3 and Figure I.2)

- The forecast of C-3 District employment growth (representing the demand for space) indicates that, due to the large amount of development currently under construction, approved or in review, the Alternatives would not begin to affect employment in the C-3 District until after 1990.
- The potential for continued C-3 District economic growth is strong. The amount of growth occurring in the C-3 District would be affected by the choice of Alternative. Much of the activity that would not occur in the C-3 District under some Alternatives could locate elsewhere in San Francisco, outside the C-3 District (e.g. farther south of Market Street), depending on City policies affecting these areas. Some portion of this activity would locate outside the City.
- The Alternatives would have less effect on employment growth than on the development of space. The major reason is that employment densities are expected to increase under those Alternatives with lower growth of space.
- There would be employment growth in all Alternatives and in all business activities, except industrial/warehouse/automotive activities and cultural/institutional/educational activities.
- Alternative 1 would allow the most overall employment growth, followed closely by Alternative 2. Alternative 3 would fall in the middle of this range. Alternative 4 would allow the least overall employment growth and Alternative 5 somewhat more than Alternative 4. The increase in total C-3 District employment from 1990 to 2000 would range from 14 to 20 percent, depending on the Alternative.

TABLE I.3: SUMMARY OF C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY

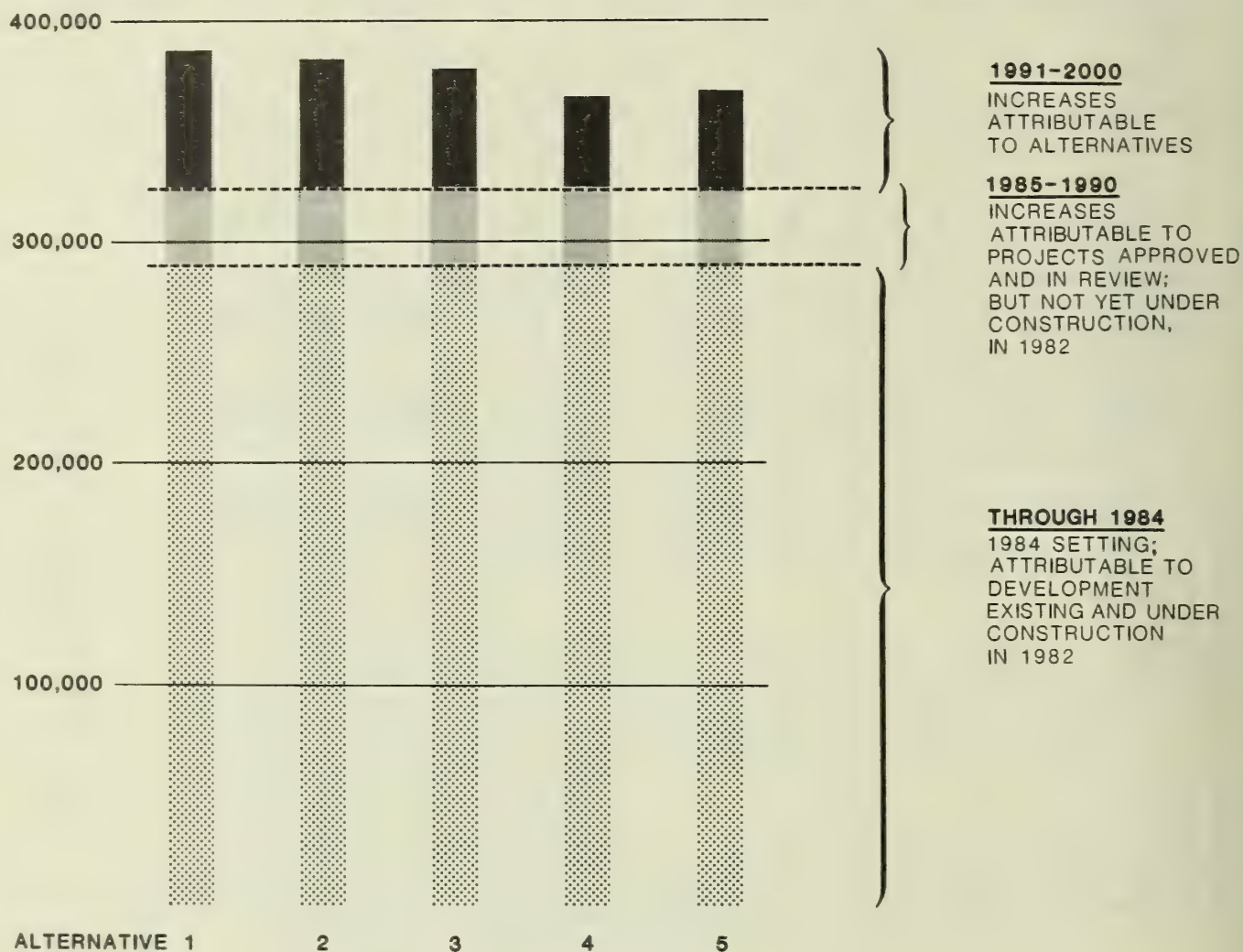
Business Activity	1990			2000				
	Total Employment	% Change From 1984	Total Employment By Alternative					% Change from 1990
			1	2	3	4	5	
Primary Office	185,900	16	261,600	259,500	257,000	247,100	248,500	21
Secondary Office	37,400	15	54,300	53,600	52,900	50,800	51,600	26
Retail Trade	23,200	9	29,000	29,000	28,500	28,000	28,000	14
Hotel	13,800	18	20,600	20,600	20,600	20,200	20,200	26
Cultural/Institutional/ Educational	8,340	11	10,100	9,900	9,900	9,100	9,300	9
Industrial/Warehouse/ Automotive/Parking	6,500	-13	3,700	3,700	3,300	5,300	4,100	-34
Building Maintenance	5,800	13	7,900	7,800	7,600	7,100	7,100	21
TOTAL Permanent Employment	280,900	15	387,200	384,100	379,800	367,600	368,800	20
<hr/>								
			1990-2000					
Permanent Employment Growth			64,700	61,500	57,200	45,100	46,300	
<hr/>								
Annual Growth Rate from 1984			2.03%	1.98%	1.90%	1.70%	1.72%	
<hr/>								
			1990-2000					
Average Employment/Year			Average Employment/Year by Alternative					
Construction Employment			5,400	5,300	4,900	4,300	4,200	

NOTE: All numbers are rounded to nearest 100 jobs.

SOURCE: Recht Hausrath & Associates

**TOTAL C-3 DISTRICT
EMPLOYMENT**

PERIOD OF GROWTH



**FIGURE I.2:
C-3 DISTRICT EMPLOYMENT,
BY ALTERNATIVE, 2000**

SOURCE: Environmental Science Associates, Inc.

- Construction employment is directly related to the amount of building activity and would follow the same pattern as permanent employment.

Comparison of Alternatives from the Perspective of Businesses/Employers (see Table I.4)

- Alternatives 1 and 2 would result in lower costs of doing business in the C-3 District than would the other Alternatives. Alternatives 4 and 5 would result in higher costs. Alternative 3 falls within this range.
- Alternative 1 would generally provide the most options for businesses desiring C-3 locations.
- Alternative 4 would generally provide the least options.
- Alternative 3 would have the greatest range of effects on businesses in terms of opportunities for locating in the C-3 District. Its effect on hotel and retail activities would be no different from the higher growth Alternatives, but its effect on industrial, institutional and other similar activities would be the most severe of any Alternative.
- The choice of an Alternative would make the least difference for hotel and retail activities, followed by those office activities that place a high value on a C-3 District location.
- The choice of an Alternative would make the most difference for rent-sensitive activities - both small firms and large space users.
- The options within the C-3 District for industrial, institutional, and other similar activities would be limited in all Alternatives.

TABLE I.4; SUMMARY COMPARISON OF ALTERNATIVES FROM THE PERSPECTIVE OF EMPLOYERS AND EMPLOYEES

From The Perspective Of Businesses/Employers

	Alternatives				
	1	2	3	4	5
Relative Cost of Doing Business in C-3 District	Lowest	Almost as Low as 1	Middle Level	Highest	Almost as High as 4

Comparison of Location Options in the C-3 District from Perspective of:

• Office firms that value C-3 locations most and pay most to be there	A	A	B	C	C
• Small, rent-sensitive office firms	A	B	B	E	D
• Large space using office functions unwilling to pay high rents	A	B	C	E	E
• Hotel and retail activities	A	A	A	B	B
• Industrial, institutional, and other activities unable to pay higher rents	D	D	E	B	C

Key: A = Most Options
E = Least Options

From The Perspective Of Labor Force Members/Employees:

	Alternatives				
	1	2	3	4	5
Relative Number of Job Opportunities in C-3 District	Most	Almost as Much as 1	Middle Level	Least	Almost as Low as 4

Comparison of Job Opportunities in the C-3 District from Perspective of:

• Entry level office workers	A	B	C	E	D
• Entry level sales and service workers	A	A	A	B	B
• Mid-level office workers	A	B	C	E	D
• Non-office crafts, operatives and laborers	D	D	E	B	C
• Experienced professional, executive and other top level workers	A	A	C	E	D
• Construction workers	A	A	B	C	C

Key: A = Most Opportunities
E = Least Opportunities

SOURCE: Recht Hausrath & Associates

Comparison of Alternatives from the Perspective of Labor Force Members/Employees (See Table I.4)

- Alternatives 1 and 2 would result in more total job opportunities in the C-3 District than other Alternatives. Alternatives 4 and 5 would result in less total job opportunities. Alternative 3 falls within this range.
- Alternatives 1 and 2 would have similar effects on job opportunities. The difference would be somewhat fewer opportunities for entry and middle level office workers in Alternative 2.
- Alternative 3 would result in the widest range of effects on job opportunities, depending on the type of worker. Compared to the other Alternatives, this Alternative would offer the least options to non-office crafts, operatives and laborers, a relatively high number of opportunities for entry level sales and service workers (similar to Alternatives 1 and 2) and moderate opportunities for all levels of office workers.
- Alternative 4 would offer the most options to non-office crafts, operatives, and laborers and the least options to all levels of office workers.
- Compared to the other Alternatives, Alternative 5 would offer a more moderate increase in job opportunities. There would be fewer C-3 District options for office workers than in the higher growth Alternatives, but more options for non-office crafts, operatives and laborers. Office workers would have more opportunities under this Alternative than they would under Alternative 4.
- Opportunities for construction workers would be highest in those Alternatives with the most amount of building activity (Alternatives 1 and 2) and least in the relatively lower activity Alternatives (Alternatives 4 and 5).

I. Summary

- The choice of an Alternative would make the least difference for entry level sales and service workers.
- The choice of an Alternative would make the most difference for office workers, of all levels. There would be somewhat less of a difference among Alternatives from the perspective of non-office crafts, operatives and laborers.

Residence Patterns And Housing Impacts

Summary of Future Residence Patterns of C-3 District Workers to the Year 2000 (see Table I.5)

- Future residence patterns of C-3 District workers will change over time due to a combination of local and regional factors. These include the number and mix of types of future C-3 District jobs, the growth and distribution of labor force, housing, and employment throughout the region, and the "propensity" of individuals to live in each county and work in the C-3 District as influenced by transportation, lifestyle, demographic, and housing market factors.
- Differences in residence patterns among Alternatives would occur because of differences in both C-3 District employment and the supply of housing in San Francisco. Generally, the Alternatives with the most C-3 District employment growth would have the least increase in housing units in the City, and the Alternative with the least employment growth would also have the greatest increase in housing, citywide. As a consequence of this pairing of effects of the Alternatives, the number of C-3 District employees forecast to be living in San Francisco does not vary much among Alternatives. The increase in C-3 District employees living in San Francisco from 1990 to 2000 would range from nine to 12 percent depending on the Alternative.

TABLE I.5: SUMMARY OF RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS

Number of Workers By Place of Residence	1984		1990		2000				
	Total	% Change From 1984	Total	% Change From 1984	Total By Alternative				
					1	2	3	4	5
San Francisco	158,700		173,200	9	193,100	192,100	190,500	190,200	189,300
East Bay	73,200	23	90,200	23	117,200	115,900	114,300	106,900	108,100
South Bay	34,600	17	40,600	17	50,800	50,200	49,200	46,200	46,700
North Bay	19,500	22	23,700	22	31,100	30,800	30,400	28,400	28,700
Other	100		200		300	300	300	200	200
Total	286,100		327,900		392,600	389,300	384,700	371,900	373,000
Percentage Distribution Of Workers By Place Of Residence	%		%		%	%	%	%	%
San Francisco	55.5		52.8		49.2	49.3	49.5	51.1	50.8
East Bay	25.6		27.5		29.9	29.8	29.7	28.7	29.0
South Bay	12.1		12.4		12.9	12.9	12.8	12.5	12.5
North Bay	6.8		7.3		8.0	8.0	8.0	7.7	7.7
Other	small		small		small	small	small	small	small
Total	100%		100%		100%	100%	100%	100%	100%
Summary For San Francisco									
Total Employed San Francisco Residents	352,700		371,370		397,700	399,000	398,360	402,400	400,200
San Francisco Residents Working In C-3 District As Percentage Of All Employed Residents	45.0%		46.6%		48.6%	48.1%	47.8%	47.2%	47.3%
San Francisco Residents Working In C-3 District As Percentage Of C-3 District Jobs	55.5%		52.8%		49.2%	49.3%	49.5%	51.1%	50.8%
Net Increase In Residents Working In C-3 District As Percentage Of Net In- crease In C-3 District Jobs			34.7%		30.7%	30.7%	30.5%	38.5%	35.7%

NOTE: East Bay includes Alameda, Contra Costa, Solano and Napa Counties; South Bay includes San Mateo and Santa Clara Counties; North Bay includes Marin and Sonoma Counties. Numbers are rounded to nearest 100 persons. Number of workers includes permanent employment and annual average construction labor

SOURCE: Recht Hausrath & Associates

I. Summary

- The number of C-3 District workers residing in all counties of the region would increase over time under all Alternatives.
- Throughout the 1980's and 1990's, the largest number of C-3 District workers would live in San Francisco under all Alternatives. The next largest number would live in the east bay, followed by the south bay, and then the north bay.
- From 1984 to 2000, the most increase is expected for workers residing in the east bay. The next largest increase would occur for workers living in San Francisco, followed by the increase of those living in the south bay and then the north bay.
- In terms of percentage increases, the largest percentage growth of C-3 District workers would occur for those residing in the north bay and the east bay, followed by the south bay, and then San Francisco.
- There would not be large differences among Alternatives in the percentage distributions of C-3 District workers throughout the region. The differences which would occur are primarily attributable to differences in the number residing in San Francisco. Generally, the increase in C-3 District workers living in each part of the region outside of San Francisco is largest when C-3 District employment growth is largest and San Francisco housing growth is smallest. Thus, the percentages of C-3 District workers residing in all areas outside of San Francisco would be highest under Alternative 1 and lowest under Alternative 4. Alternative 5 would be most similar to Alternative 4 and Alternative 2 would be most similar to Alternative 1. Alternative 3 would fall in the middle.
- All of the increase in C-3 District workers forecast to reside in each county throughout the region does not reflect a net

addition of population in the region or in each county. The growth of population to provide labor for job growth would be less than the increase in jobs primarily because labor force participation within the existing population is expected to increase.

- The differences among Alternatives in the number of C-3 District workers residing in each county do not necessarily reflect differences in the number of employed residents in each place. The outcome depends on whether the differences in C-3 District jobs reflect shifts in employment among locations within the region. For example, if less employment in the C-3 District resulted in more employment elsewhere in San Francisco, there could be little difference in the number of employed residents in the City since a smaller number would be employed in the C-3 District but a larger number would be employed elsewhere in the City.

Comparison of Alternatives From The Perspective of San Franciscans Employed In The C-3 District (see Table I.6)

- The number of San Francisco residents working in the C-3 District will be affected by the growth of C-3 District jobs and the effect of C-3 District policies on the growth of housing in San Francisco. Generally, C-3 District job growth would be largest under Alternatives 1 and 2 and smallest under Alternatives 4 and 5. The increase in housing in the City would be greatest in Alternatives 4, 5, and 2 (in descending order) and lower for Alternatives 1 and 3. Both C-3 District employment growth and citywide housing growth would result in increased numbers of C-3 District workers living in San Francisco.
- The number of San Francisco residents working in the C-3 District would increase under all Alternatives. The increase would be largest for Alternatives 1 and 2 and lowest for Alternatives 4 and 5. Alternative 3 would fall in the middle. The differences among the Alternatives are not large.

TABLE I.6: SUMMARY COMPARISON OF ALTERNATIVES WITH RESPECT TO HOUSING FACTORS

Changes In Residence Patterns Of C-3 District
Workers As Related To How San Francisco
Residents Share In The Growth Of Downtown Jobs

	Alternatives				
	1	2	3	4	5
Growth of Jobs In C-3 District	A	B	C	E	D
Addition of Housing In San Francisco	E	C	D	A	B
San Francisco Residents Employed In C-3 District	A	B	C	E	D
Non-San Francisco Residents Employed In C-3 District	A	B	C	E	D
Existing San Francisco Residents Newly Employed In C-3 District	A	B	C	D	E
Increase In C-3 District Workers Who <u>Move</u> Into San Francisco	A	B	C	D	E
Percent of C-3 District Jobs Held By San Francisco Residents	E	D	C	A	B
Percent of Employed San Francisco Residents Working In C-3 District	A	B	C	E	D

Key: A = Largest Number or Percentage
E = Smallest Number or Percentage

From Perspective Of San Francisco's Housing Market

	Alternatives				
	1	2	3	4	5
Increased Competition For Housing Stock	A	B	C	E	D
Upward Pressure On Housing Prices and Rents	A	B	C	E	D

Key: A = Most Effect Within Context Of Other Future Housing Market Factors
E = Least Effect Within Context Of Other Future Housing Market Factors

SOURCE: Recht Hausrath & Associates

- The percentage of C-3 District jobs held by San Francisco residents would decline over time under all Alternatives. The major reason is that future laborforce and housing growth in San Francisco will not increase in proportion to C-3 District job growth and certainly not in proportion to laborforce and housing growth elsewhere in the region. The percentage of C-3 District jobs held by residents would be higher under Alternatives 4 and 5 and lower under Alternatives 1, 2 and 3. The percentage would be highest when the increase in San Francisco housing is largest relative to the growth of jobs.

Comparison of Alternatives From The Perspective Of San Francisco's Housing Market (see Table I.6)

- The current housing situation arises out of a local, regional, and national context. While downtown employment and employment growth play an important role, the housing problems of San Francisco residents are not solely or mainly due to downtown growth. Other factors which have been important include changing lifestyles, changing demographic and household characteristics, rising household incomes, the availability of cost of financing, the attractiveness of the Bay Area as a place to live, no-growth policies in some communities and the increasing scarcity of land in others, the attractiveness of real estate as an investment, and many others.
- The housing impacts of concern here are those that would arise from future differences in the City's housing market because of the choice of an Alternative for the C-3 District. Differences could occur because employment growth results in increased competition for the City's stock of housing and rents and prices would be higher than they otherwise would have been. Differences could also occur because new housing development reduces the competition for the City's housing stock and rents and prices would be lower than they otherwise would have been.

1. Summary

- Alternative 1 would result in the most competition from C-3 District workers for housing in San Francisco and the most upward pressure on housing prices and rents. This Alternative would support the most growth of C-3 District employment and the least growth of housing.
- Alternative 4 would result in the least competition for San Francisco housing by C-3 District workers and the least upward pressure on housing prices and rents. It would result in the most additional housing and the smallest amount of C-3 District employment growth.
- Alternative 5 would be most similar to Alternative 4 from the perspective of housing market impacts. Alternative 3 would rank third among the five Alternatives. Alternative 2 would be most similar to Alternative 3. While Alternative 2 supports employment growth that is very similar to Alternative 1, it would result in the addition of more housing to offset some of the increased competition for housing because of job growth.
- To the extent that housing prices and rents would be higher than they otherwise would have been, some people may decide not to move into San Francisco, current residents who rent could find it more difficult to buy a home, and some existing residents may move out of the City if they find a more acceptable housing product elsewhere. Others would continue to live in San Francisco and to pay higher prices and rents for City housing.

Transportation and Circulation (see Table I.7)

- The transportation impacts that would result for each of the five Alternatives are similar in magnitude.
- In general, the highest number of trips on all modes would result from travel expected under Alternative 1, although the numbers of trips that would result from Alternatives 2 and 3 are similar.
- The least number of trips would result from Alternative 4, although the number of trips under Alternative 5 would be similar.
- Transit ridership would increase substantially from existing levels under each of the five Alternatives. Transit ridership is currently at or near capacity at least during a portion of the peak hour. Additional capacity is planned under current Five Year Plans (1982-1987) for the affected transit agencies. The planned improvements would be necessary to meet 1990 demand levels. Additional transit vehicles would be needed in the future beyond 1987 to provide adequate capacity under each of the Alternatives.
- Peak-hour traffic on regional roadways is currently at or near capacity. The traffic expected under each of the Alternatives would increase the traffic and would also result in some shifts to transit, ridesharing and to times other than the peak hour. Congestion levels on the regional roadways would be expected to continue into the future at least at existing levels.
- Of eleven key intersections examined, five would be expected to operate under poor to jammed conditions during the a.m. and/or p.m. peak hour under each of the five Alternatives.
- Pedestrian activity during the noon and p.m. peak hours would increase, with "Constrained" conditions in some areas. Constrained conditions indicate some limitations in movement with bumping and jostling among pedestrians.

TABLE I.7: C-3 DISTRICT P.M. PEAK HOUR TRANSPORTATION IMPACTS, 1990, BY ALTERNATIVE, 2000

	1990			% Change from 1984	2000									
	1984				% Change from 1990									
		1	2		3	4	5	1	2	3	4	5		
1. Total Person Trip-ends	178,790	203,200	13.7	240,030	238,040	235,420	228,790	229,300	18.1	17.1	15.9	12.6	12.8	
2. Transit Ridership														
Muni														
Northeast	6,450	7,180	11.3	8,210	8,140	8,040	8,150	8,180	14.3	13.4	12.0	13.5	13.9	
Northwest	8,900	9,960	11.9	11,160	11,060	10,890	11,030	11,080	12.0	11.0	9.3	10.7	11.2	
Southwest	12,220	13,660	11.8	15,240	15,130	15,030	14,890	14,930	11.2	10.8	10.0	9.0	9.3	
Southeast	2,710	3,010	11.0	3,670	3,640	3,680	3,450	3,560	21.9	20.9	22.3	14.6	18.3	
BART														
Trans-Bay	16,500	20,570	24.7	29,420	29,160	28,750	27,390	27,430	43.0	41.8	39.8	33.2	33.3	
SW of Civic Center	7,470	8,810	17.9	10,860	10,760	10,640	10,120	10,120	23.2	22.1	20.8	14.9	14.9	
AC Transit														
Bay Bridge	8,660	9,410	8.7	9,650	9,580	9,350	8,960	8,990	2.6	1.8	-0.6	-0.5	-0.4	
Golden Gate Bus														
Bridge	4,480	7,150	59.6	9,620	9,530	9,400	9,030	9,000	34.5	33.3	31.5	26.3	25.9	
Golden Gate Ferry														
Bay	780	1,140	46.2	1,490	1,480	1,420	1,340	1,370	30.7	29.8	24.6	17.5	20.8	
Tiburon Ferry														
Bay	180	210	16.7	260	260	260	260	250	23.8	23.8	23.8	3.8	19.0	
SamTrans														
SW Study Boundary	1,910	2,370	24.1	3,220	3,200	3,130	2,950	2,970	35.9	35.0	32.1	24.5	25.3	
CalTrain (SPRR)														
Fourth St. Station	3,130	4,070	30.0	5,230	5,190	5,070	4,950	4,930	28.5	27.5	24.6	21.6	21.2	
3. Regional Traffic Volumes														
Bay Bridge (I-80)	8,400	8,400	0.0	9,370	9,350	9,330	8,870	8,940	11.5	11.3	11.1	5.6	6.4	
Golden Gate Bridge	6,610	6,610	0.0	7,200	7,170	7,140	6,980	6,970	8.9	8.5	8.0	5.6	5.4	
(US-101)														
US-101 (South of	7,400	7,990	8.0	9,220	9,190	9,170	8,990	8,980	15.4	15.0	14.8	12.5	12.4	
Harney Way)														
I-280 (Between Alemany	8,210	8,870	8.0	10,190	10,160	10,140	9,960	9,950	14.9	14.5	14.3	12.3	12.2	
Blvd. & San Jose Ave)														
4. Total Daily Parking Demand	45,600	51,600	13.2	61,200	60,730	60,100	58,260	58,500	18.6	17.7	16.5	12.9	13.4	

SOURCE: TJKM, Transportation Consultants.

SOURCE: TJKM, Transportation Consultants

Community Services

- The current landfill disposal contract with Mountain View expires in November, 1983. A new (July 1982) contract with Alameda County to use the Altamont Hills landfill site will begin on November 1, 1983 and extend for five years to November 1, 1988. It is not known how the City will dispose of its solid waste after 1988. The City is currently looking for additional landfill sites. Construction of a Resource Recovery Facility, which is also being pursued, would reduce future needs for landfill space.
- The shift in land use in Subareas 2 and 3 in all Alternatives away from light industrial and toward office (and commercial and residential) uses would alter the waste stream from these areas by producing more paper, and less metals, wood crating and industrial materials (chemicals, plastics). This could make disposal, recycling, and resource conversion easier, in spite of overall projected annual tonnage increases.
- The Alternatives ranked in decreasing order of annual solid waste generation would be 1, 2, 3, 4, 5.
- Annual office growth limits would be effective in reducing annual solid waste generation by up to about 10% from the C-3 District. This reduction would not, however, postpone either the need for new landfill sites or new methods of disposal after 1988.
- Almost 20% of all reported criminal incidents in the City occur in the C-3 District.
- Between 1984 and 1990, 70% of all new crime in the C-3 District would occur in Subareas 5 and 6. Tourist hotel and retail uses in these areas would experience most of this increase.
- Alternatives ranked in decreasing order of new criminal incidents in the C-3 District between 1990 and 2000 would be: 1, 2, 3, 5, 4.
- Under all of the Alternatives, about 65% - 70% of the increased in criminal incidents between 1990 and 2000 would occur in Subareas 5 and 6. The new retail space in Subareas 5 and 6 would experience a disproportionate share of the new criminal incidents.

I. Summary

- Subareas 3, 4, and 7 would experience little increase in crime under any of the Alternatives. Subareas 1 and 2, although containing about 60% of the growth between 1990 and 2000, would experience only 25% to 30% of the increase in C-3 District annual criminal incidents in that period.
- Projected criminal incident increases would increase demands on Police Department personnel time by no more than 1% to 2% between 1984 and 2000 under any of the Alternatives. Should the Police Department hire personnel and buy equipment to meet these demands (i.e., maintain existing levels of service), their operating budget would also increase by no more than 1% to 2% between 1984 and 2000. No major capital improvements would be necessary.
- Annual office development limits would not be effective in reducing crime rates in the C-3 District, primarily because new office space would not be a major target of new crime.
- Between 1984 and 1990 (as well as between 1990 and 2000 for all Alternatives) the annual number of non-fire incidents would increase more rapidly than fire incidents. This is due to the effectiveness of the San Francisco and State Life Safety Code provisions for new building construction. The increase in non-fire incidents would tend to be almost directly proportional to increases in population.
- The Alternatives ranked in decreasing order of total annual C-3 District fire incidents in the year 2000 are: 2 and 4, 1 and 3, 5. The number of incidents for Alternatives 2 and 4 are relatively high, because they have proportionately greater amounts of housing than do the other Alternatives, and housing has among the highest fire incident rates. The Alternatives ranked in decreasing order of non-fire incidents are: 1, 2, 3, 4, 5. In decreasing order of total incidents, they are: 1 and 2, 3, 4, 5.
- No more than a one-percent difference would occur between the Alternatives in total annual C-3 District incidents in the year 2000.
- Total annual C-3 District incidents would increase by about one percent between 1984 and 1990, and by about two percent (Alternatives 1 and 2) between 1990 and 2000.

I. Summary

- The firefighting units serving the C-3 District are currently among the busiest in the City. They would all be even busier in the year 2000, but the Fire Department sees no need for new units. Engine Co. 1, that unit likely to receive the greatest demand for new service hours as a result of projected C-3 District development, would operate at about 85% of its "threshold for new service."
- Service to neighborhoods adjoining the C-3 District would not be affected.
- The Department would need two to three new fire inspectors between 1984 and 2000 to adequately serve the projected new building area. No new equipment or administrative personnel would be required to support these inspectors.
- No new equipment or staff would be needed to handle projected shifts from fire to non-fire incidents.
- Annual office development limits would not be effective in reducing fire incidents, and would have a small effect (less than one percent) in reducing non-fire incidents.

Fiscal Factors (see Table I.8)

- The analysis of the fiscal consequences of additional C-3 District growth considered the direct effects on City services provided to the District and the City revenues that would result from changes in space and activity there. Estimates were prepared of the additional revenues from certain local taxes and fees and the additional costs for the public services likely to be affected most directly by changes in space and activity in the District.
- In 1990, the additional annual general fund revenues from local taxes would exceed the additional annual costs for police, fire, and Muni services by about \$35.8 million (in 1982 dollars).
- In 2000, the additional annual general fund revenues would exceed the additional annual costs for police, fire, and Muni services under all Alternatives. The difference between annual revenues and costs in 2000 would range from about \$59.2 million to \$77 million (in 1982 dollars).
- The difference between annual revenues and costs would be relatively similar for Alternatives 1 and 2. The difference under Alternative 4 would be slightly larger than the difference under Alternative 5. Alternative 3 would fall between Alternatives 2 and 4, although more similar to Alternative 2.
- Among the Alternatives, there would be greater variance in additional revenues than in additional costs. In 2000, additional annual revenues would vary by about \$18.1 million between the Alternative with the least additional revenue and the Alternative with the most additional revenue. The variance in additional costs among the Alternatives would be relatively small in 2000. Additional annual costs would vary by about \$700,000.

TABLE 1.8: COMPARISON OF ADDITIONAL CITY REVENUE AND EXPENDITURES IN 1990 AND 2000 DUE TO CHANGES IN SPACE AND ACTIVITY IN C-3 DISTRICT, 1984-2000 (Millions of 1982 Dollars)

	Annual Costs and Revenues In 1990	Annual Costs and Revenues In 2000, By Alternative				
		1	2	3	4	5
Muni Deficit (expenditures minus special revenues)	\$ 3.66	\$10.30	\$10.10	\$10.06	\$ 9.96	\$10.28
Police and Fire Expenditures	.76	1.79	1.79	1.68	1.39	1.34
Total Expenditures (police and fire plus Muni deficit)	4.42	12.09	11.89	11.74	11.35	11.62
General Fund Revenues	40.19	89.04	88.12	82.15	72.86	70.83
Revenues Available for Other City Services (general fund minus total expenditures)	\$35.77	\$76.95	\$76.23	\$70.41	\$61.51	\$59.21

SOURCE: Recht Hausrath & Associates

I. Summary

- The difference between additional general fund revenues and the additional costs for police, fire, and Muni services would be available for the financing of other City services. This could include the direct and indirect effects of C-3 District growth not quantified in this report, as well as the City services unaffected by changes in space and activity in the District. Whether the other costs not considered in this analysis would be more or less than other revenues is uncertain.
- In addition to the general fund revenues shown in Table I.8, growth in the C-3 District would result in additional revenue for the City's hotel tax fund. In 1990, additional annual hotel tax fund revenues would be \$4.3 million (in 1982 dollars). In 2000, the additional annual hotel tax fund revenues would vary by Alternative, ranging from \$11.8 million with Alternatives 4 and 5 to \$12.6 million with Alternatives 1, 2 and 3 (in 1982 dollars).

Urban Design

- In the absence of provisions for architectural resource preservation, including transfer of development rights (TDRs), the number of rated architectural resources becoming vulnerable to demolition would range from a high of about 12 per year under Alternative 1 to a low of 6 per year under Alternative 4.
- The provisions of Alternative 2 are forecast to be the most effective in protecting highly rated architectural resources; the provisions of Alternative 1, least effective. TDR provisions of Alternative 2 would reduce by about 95% the number of highly rated resources that would otherwise become vulnerable; Alternative 1 would reduce that number by only about six percent.
- Alternative 1 would have the greatest potential to increase wind speeds at street level, since it would result in the greatest building heights and buildings with relatively uniform faces. Alternative 2 ranks second in terms of its potential wind impacts, followed by Alternatives 4 and 3. Alternative 5 has the least potential for wind impacts because it would result in complex designs with numerous setbacks at upper levels, and because it would require wind protection in required open space.
- The wind standards for plazas that are incorporated in Alternatives 2 and 4 would not be effective in insuring comfort in pedestrian areas because they are based on extreme winds, rather than average winds.
- Relative sunlight impacts of each Alternative based upon height and bulk would vary by location. Along narrow street canyons, Alternatives that tend to result in taller, more slender buildings (Alternatives 1 and 5) would have a lesser impact than the other Alternatives that result in shorter, bulkier buildings. Where street widths are greater, such as along Market Street, building height is more important than bulk in determining impacts, so that the Alternatives that would result in lower buildings in this area (1, 3 and 4) would have lesser impacts.
- The plaza sunlight requirements incorporated in Alternatives 2 and 4 are vague and could result in irregular and infeasible height restrictions.

I. Summary

- The sunlight access standards for outdoor spaces and maximum street wall heights and elevation angles specified for certain streets under Alternative 5 would result in a lesser impact than would the other Alternatives in these areas.
- Skyline impacts are principally related to the densities of new development; heights and bulks of the buildings permitted; provisions for reducing bulk at upper levels; shaping tops and otherwise configuring building profiles; provisions for facade treatments and materials; and provisions for distribution of new growth, particularly with respect to existing topography and building forms. Since Alternative 1 would generally permit the most development and the largest buildings, and would not impose controls on building shapes or materials, it would have the greatest potential overall effects on the skyline. Alternative 2 would provide for the next greatest amount of development, and would permit the next largest buildings, but would provide for building setbacks at upper levels. Alternative 3 would permit shorter buildings, but would not reduce their bulk or shape their form. Distribution of new development would be somewhat greater under Alternative 3 and it would therefore tend to disturb patterns of existing development more than other Alternatives. Alternative 4 would reduce heights to the lowest of any Alternative except Alternative 3, but would provide fewer controls for building shape than Alternatives 2 or 5. Alternative 5 would include a new system of bulk controls for reducing bulk at upper levels and shaping building tops. In general, it would result in relatively lower levels of development than would most other Alternatives, and would physically shape and geographically distribute new construction to add interest to the skyline and to reduce disruption of existing topography and fine-scaled urban forms.

II. BACKGROUND AND INTRODUCTION

A. BACKGROUND

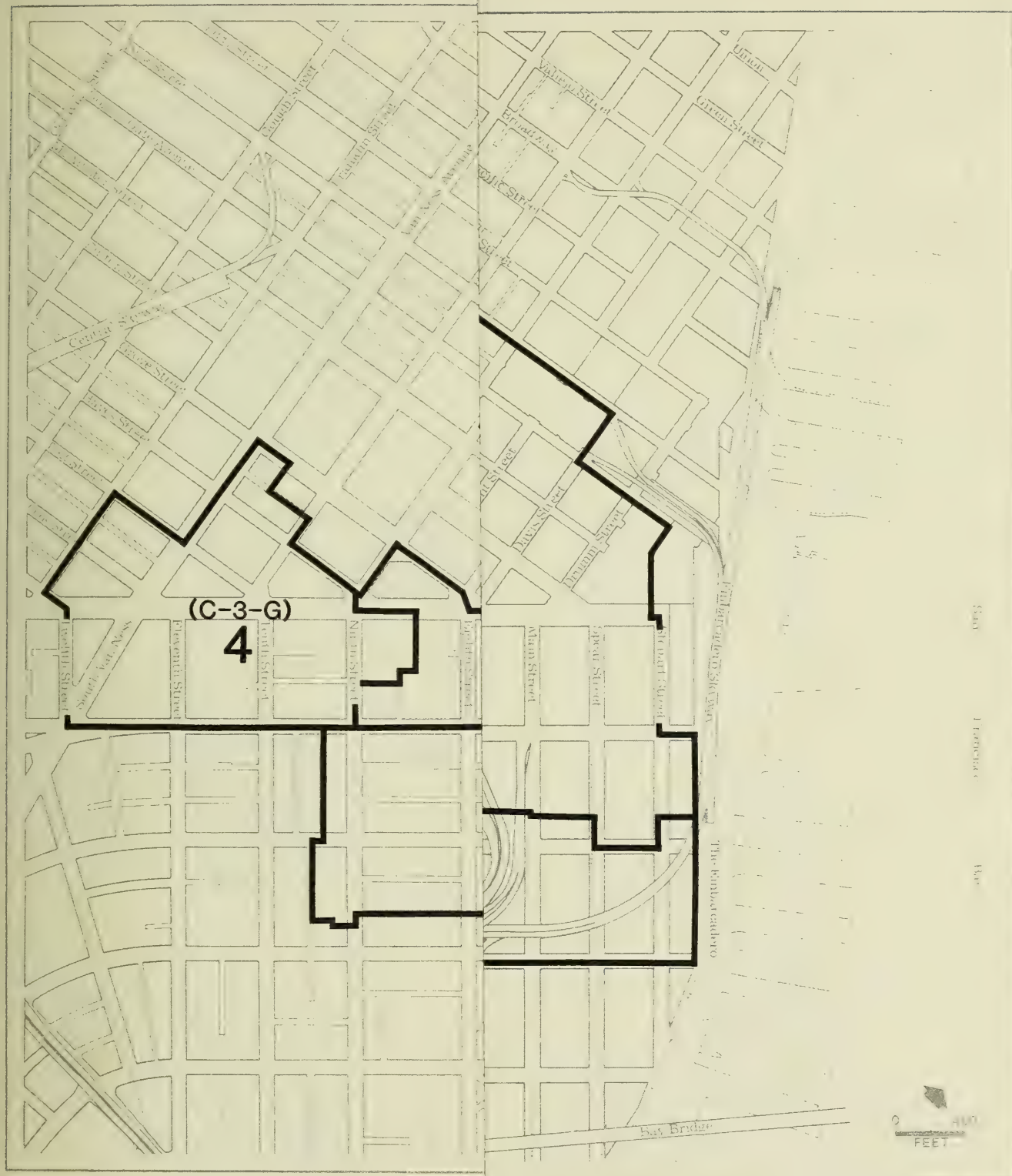
For a number of years there have been differing opinions about the growth of downtown San Francisco. To address the issues of this controversy several organizations, including the Department of City Planning, San Franciscans for Reasonable Growth and the San Francisco Chamber of Commerce, have proposed regulatory alternatives for managing downtown development.

In 1980, the San Francisco City Planning Commission resolved to evaluate the potential environmental impacts of several of these alternatives. With this information, the Department of City Planning could develop for public review comprehensive revisions to sections of the City Planning Code relevant to downtown. To help in this task, the Commission authorized preparation of a Downtown EIR (Environmental Impact Report) and established an independent EIR Contract Monitoring Panel.

Private sector interests contributed monies which were used by the Panel to fund preparation of initial materials for the Downtown EIR. This report is being published to make the materials available to the public at the earliest possible time. The report is a product of the consultant and represents the consultant's judgment.

The report and the evaluation of alternatives will be used by the Department of City Planning in developing and presenting for public review a Downtown Plan and EIR. Funds for continuing the EIR process will be provided by the City.

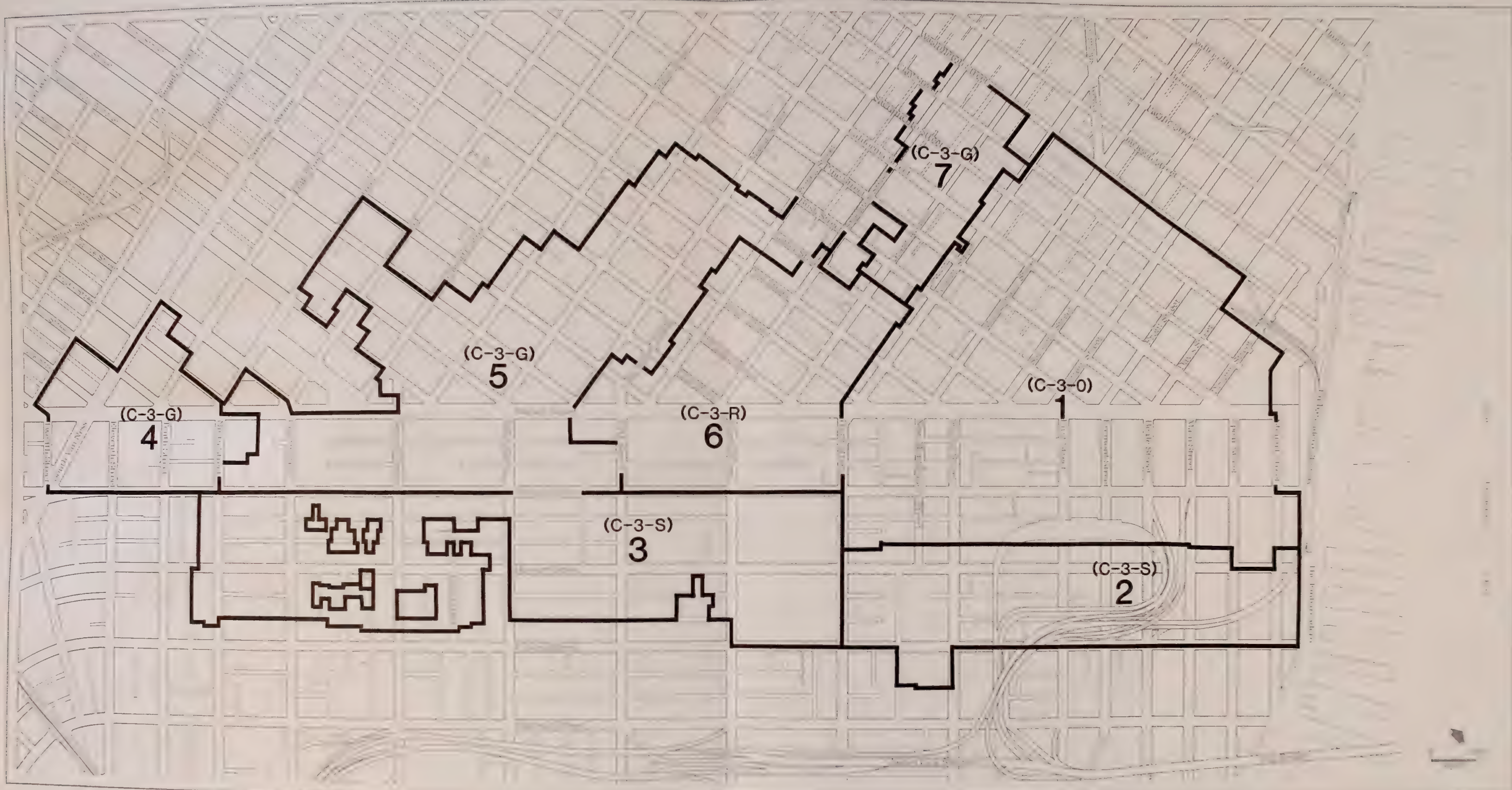
Although this report has been prepared with a format and approach that are similar to those of an EIR, the report is not an EIR document and is not subject to the requirements of the California Environmental Quality Act or its implementing guidelines. Rather, the report is a public informational document, all or portions of which may be subject to incorporation by reference in subsequent environmental documents.



- 1 CENTRAL OFFICE
- 2 EAST SOUTH OF M
- 3 CENTRAL SOUTH O
- 4 SOUTH VAN NESS

**FIGURE II. C.1:
DOWNTOWN STUDY AREA
AND C-3 USE DISTRICTS**

SOURCE: San Francisco Planning Code and
Environmental Science Associates, Inc.



- 1 CENTRAL OFFICE SUBAREA (C-3-O)
- 2 EAST SOUTH OF MARKET SUBAREA (EAST C-3-S)
- 3 CENTRAL SOUTH OF MARKET SUBAREA (WEST C-3-S)
- 4 SOUTH VAN NESS SUBAREA (SOUTH C-3-G)

- 5 TENDERLOIN SUBAREA (CENTRAL C-3-G)
- 6 UNION SQUARE WEST SUBAREA (C-3-R)
- 7 CHINATOWN SUBAREA (NORTH C-3-G)

NOTE: See Table III.1 for explanation of Use District symbols.

**FIGURE II. C.1:
DOWNTOWN STUDY AREA
AND C-3 USE DISTRICTS**

SOURCE: San Francisco Planning Commission
Environmental Science Center

II. Background and Introduction

The Downtown Study Area has been subdivided for the purposes of this report into the following seven primary subareas (hereinafter referred to as "subareas"):

- 1 Central Office Subarea (C-3-0)
- 2 East South of Market Subarea (East C-3-S)
- 3 Central South of Market Subarea (West C-3-S)
- 4 South Van Ness Subarea (South C-3-G)
- 5 Tenderloin Subarea (Central C-3-G)
- 6 Union Square Subarea (C-3-R)
- 7 Chinatown Subarea (North C-3-G)

San Francisco Study Districts and Study Areas (see Figure II.C.2) generally conform to and consist of planning districts adopted by the Department of City Planning. For the purposes of this report, the City is subdivided into the following four Study Areas and 15 Study Districts:

Southeast Study Area

- Potrero Study District
- South Bayshore Study District
- South Central Study District
- Bernal Heights Study District
- Mission Study District

Southwest Study Area

- Central Study District
- Ingleside Study District
- Outer Sunset Study District
- Inner Sunset Study District
- Buena Vista Study District

Northwest Study Area

- Western Addition Study District
- Richmond Study District
- Marina Study District

Northeast Study Area

- Northeast Study District
- Downtown Study District



SOUTHEAST STUDY AREA

- 1 Potrero Study District
- 2 South Bayshore Study District
- 3 South Central Study District
- 4 Bernal Heights Study District
- 5 Mission Study District

SOUTHWEST STUDY AREA

- 6 Central Study District
- 7 Ingleside Study District
- 8 Outer Sunset Study District
- 9 Inner Sunset Study District
- 10 Buena Vista Study District

NORTHWEST STUDY AREA

- 11 Western Addition Study District
- 12 Richmond Study District
- 13 Marina Study District

NORTHEAST STUDY AREA

- 14 Northeast Study District
- 15 Downtown Study District



Primary Study Area: See FIGURE II.C.1

Secondary Study Area

- A Outer South of Market Subarea
- B Civic Center Subarea
- C Van Ness Corridor / Polk Gulch Subarea
- D Jackson Square Subarea

FIGURE II.C.2:

SAN FRANCISCO STUDY DISTRICTS AND STUDY AREAS

SOURCE: Environmental Science Associates, Inc.

II. Background and Introduction

Note that the Downtown Study District (see Figure II.C.2) includes the following four secondary subareas that are not included in the Downtown Study Area (see Figure II.C.1).

- Outer South of Market Subarea
- Civic Center Subarea
- Van Ness Corridor Subarea
- Jackson Square Subarea

Regional Study Areas (see Figure II.C.3) generally consist of counties or subdivisions of counties determined by characteristics of transportation corridors and patterns. For the purposes of this report, the region has been divided into the following ten Regional Study Areas.

- Marin/Sonoma
- Napa/Solano
- Western Contra Costa
- Eastern Contra Costa
- Western Alameda
- Eastern Alameda
- Santa Clara
- Western San Mateo
- Eastern San Mateo
- San Francisco

D. EFFECTS FOUND NOT TO BE SIGNIFICANT

In May 1981, the Department of City Planning prepared an initial study of the Alternatives which found that the environmental effects of implementing them could not be significant in the following topical areas:

- schools
- communications systems
- water services
- sewer services
- parks and recreational facilities
- construction noise



- | | |
|------------------------|---------------------|
| 1 MARIN/SONOMA | 6 EASTERN ALAMEDA |
| 2 NAPA/SOLANO | 7 SANTA CLARA |
| 3 WESTERN CONTRA COSTA | 8 WESTERN SAN MATEO |
| 4 EASTERN CONTRA COSTA | 9 EASTERN SAN MATEO |
| 5 WESTERN ALAMEDA | 10 SAN FRANCISCO |

FIGURE II.C.3:

REGIONAL STUDY AREAS

SOURCE: Environmental Science Associates, Inc.

II. Background and Introduction

- odors
- plant life
- animal life
- storm water runoff
- water quality
- water use
- natural resources (except energy)
- risk of release of hazardous substances and explosion
- hydrology and geology (except seismology)
- archaeologic, ethnic and cultural resources (except architectural resources)

These findings and the bases of these findings are set forth in the initial study, which is incorporated in this report as Appendix A. The effects found not to be significant in the initial study are not discussed further in this report.

The effects of the Alternatives upon air quality, energy resources, energy delivery systems, ambient noise levels, and seismic safety are also not discussed in this report, as they were deleted from the contractual scope of work after publication of the initial study. It is expected that these topics will be addressed in any subsequent environmental documentation of future downtown growth controls.

III. DESCRIPTIONS OF ALTERNATIVES

This report examines the following five alternative growth management programs (Alternatives) for the Downtown Commercial (C-3) Use District of San Francisco (see Figure II.C.1):/1/

- Alternative 1 (the "Planning Code Alternative") consists of the C-3 District regulations, as described in the applicable sections of the present City Planning Code (see Appendix B.1). Note that this Alternative does not represent the situation of "interim controls" which has applied to the C-3 District since July 1980. Under interim controls, the floor area bonuses that were available to office projects under the Planning Code before July 1980, and that would be available to office projects under Alternative 1, are presently unavailable to office projects except to the extent that they are used to provide housing on their sites.
- Alternative 2 (the "Chamber of Commerce Alternative") consists of the Recommended Growth Management Program presented in Section 3 of the Downtown Growth Management Program, prepared by Bolles Associates and Livingston & Associates for the San Francisco Chamber of Commerce in October 1979 (see Appendix B.2).
- Alternative 3 (the "Proposition 'O' Alternative") consists of the proposed initiative ordinance, Proposition "O", which lost in the election of November 1979 (see Appendix B.3).
- Alternative 4 (the "SFRG Alternative") consists of four of a series of five initiative ordinances proposed in 1980 by San Franciscans for Reasonable Growth (SFRG)./2/ The four initiatives would have amended the C-3 District regulations of the City Planning Code had they appeared on the ballot and been approved in the November 1980 election. Public notices of the intent to circulate the initiative petitions appeared on June 9, 1980.

III. Descriptions of Alternatives

These notices, together with an explanatory letter prepared by SFRG, dated September 23, 1981, provide the full description of this Alternative (see Appendix B.4).

- Alternative 5 (the "DCP Alternative") consists of the proposed development controls for the C-3 District presented in Guiding Downtown Development, issued by the Department of City Planning (DCP) in July 1982 (see Appendix B.5).

The full text of each of the five Alternatives is presented in Appendix B. The graphics and tables which follow in this section are intended to summarize the major characteristics of each Alternative for the convenience of the reader.

Table III.1 shows the types of uses permitted and conditionally permitted in each use district proposed under each Alternative. Figure II.C.1 shows proposed use districts for Alternatives 1 through 3; Figures III.4 and III.6 show proposed use districts for Alternatives 4 and 5. Figures III.1 through III.3 show proposed height and bulk districts for Alternatives 1 through 3; Figures III.5 and III.7 show height and bulk districts for Alternatives 4 and 5.

Table III.2 shows the basic technical, economic and environmental characteristics of each Alternative. The effects and implications of these characteristics are addressed in Section V., Environmental Impact.

NOTES - Descriptions of Alternatives

/1/ San Francisco City Planning Code, Part II, Section 210.3, p. 104.

/2/ The fifth initiative, which would have limited new commercial office development in the City to 1.0 million sq. ft. per year, will be treated herein as a mitigation measure (see Section VI) for all Alternatives.

TABLE III.1: USES PERMITTED IN PRIMARY STUDY AREA, BY USE DISTRICT AND ALTERNATIVE (a)

Planning Code Reference Section(s) (c)	Summary Description of Major Uses Permitted (c)	Use Districts(b) (and Alternative(s) in Which Each Appears)													
		Downtown Commercial					Community Business	Residential- Commercial Combined			Special Mixed Use				
		C-3-0 (1-5)	C-3-0m (4)	C-3-R (1-5)	C-3-G (1-5)	C-3-Gm (4)	C-3-S (1-3,5)	C-2 (4)	RC-3m (4)	RC-4 (4)	RC-4m (4)	RC(1) (5)	RC(2) (5)	S(1) (4)	S(2) (4)
<u>RESIDENTIAL USES</u>															
209.1(a)-(m), 215(a) and (b).	Dwelling (with restrictions on density and/or no. of units)	P	P	P	P	P	C	P	P	P	P	P	P	P	P
209.2, 216.	Group Housing (with restrictions on density and/or no. of units)														
209.2(a) and (b), 216(a).	General (including Residential Hotel)	P	P	P	P	P	C	P	P	P	P	P	P	P	P
209.2(c), 216(a).	Medical and Educational	P	P	P	P	P	C	P	C	C	C	C	P	P	P
209.2(d), 216(b). 209.2(e), 216(b). 216(c) and (d).	Transient Hotels	P	P	P	P	P	P	P	P	P	P	P	P	P	P
	5 rooms or fewer	P	P	P	P	P	P	P	C	C	C	C	P	P	P
	6 rooms or more	N	N	N	P	P	P	P	C	N	N	N	N	-	-
	Motels														
<u>INSTITUTIONAL USES</u>															
209.3(a), 217(a).	Hospitals	C	C	C	C	C	C	C	C	C	C	C	C	C	C
209.3(b) and (e), 217(b) and (c). 209.3(c) and (f), 217(b) and (c). 209.3 (g)-(j), 217(f)-(j). 209.4(a) and (b), 221(a)-(f).	Residential and Child Care Facilities														
	6 or fewer patients/12 or fewer children	P	P	P	P	P	C	P	P	P	P	P	P	P	P
	7 or more patients/13 or more children	P	P	P	P	P	C	P	C	C	C	C	-	-	-
	Schools and Churches	P	P	P	P	P	P	P	C	C	C	C	-	-	-
	Community Facilities, Halls and Theaters	P	P	P	P	P	P	P	C	C	C	C	-	-	-

TABLE III.1: USES PERMITTED IN PRIMARY STUDY AREA, BY USE DISTRICT AND ALTERNATIVE (a)

Planning Code Reference Section(s) (c)	Summary Description of Major Uses Permitted (c)	Use Districts(b) (and Alternative(s) in Which Each Appears)													
		Downtown Commercial					Community Business	Residential- Commercial Combined			Special Mixed Use				
		C-3-0 (1-5)	C-3-0m (4)	C-3-R (1-5)	C-3-G (1-5)	C-3-Gm (4)	C-3-S (1-3,5)	C-2 (4)	RC-3m (4)	RC-4 (4)	RC-4m (4)	RC(1) (5)	RC(2) (5)	S(1) (4)	S(2) (4)
<u>RETAIL SALES AND PERSONAL SERVICES</u>															
209.8(a) and (c), 218(a) and (b). 209.8(b) and (d), 218(a) and (b).	Ground floor or below (with restrictions)	P	P	P	P	P	P	P	P	P	P	P	P	P	P
	Above ground floor (with restrictions)	P	P	P	P	P	P	P	C	C	C	C	C	-	-
209.8(a)-(d), 219.	<u>OFFICES (Professional and Business)</u>	P	P	P	P	P	P	P	N(d)	N(d)	N(d)	N(d)	P	P	C
226(a).	<u>LIGHT MANUFACTURING</u> (with restrictions and exeptions)	P	P	P	P	C	P	N	C	N	C	N	C	C	P
<u>PARKING</u>															
209.7(a) and (c), 223.8	Parking Lot, privately owned	C	C	C	C	C	P	P	C	C	C	C	C	C	C
209.7(a) and (c), 223(m) and (n).	Parking garage, privately owned, completely enclosed	C	C	C	C	C	C	P	C	C	C	C	C	C	C

TABLE III.1: USES PERMITTED IN PRIMARY STUDY AREA, BY USE DISTRICT AND ALTERNATIVE (a)

NOTES:

- (a) The explicit or inferred status of each use listed in the Table, for each use district and Alternative shown, is indicated by the following symbols: "P" = Principally Permitted Use; "C" = Conditionally Permitted Use; "N" = Use Not Permitted. A blank ("") indicates that the status of a use is neither explicit nor reasonably inferred from the description(s) of the applicable Alternative(s).
- (b) Use districts are described as follows:
- (1) C-3-0: Downtown Office District (see Planning Code, Section 210.3, p. 104 or Appendix B, p. B.1.6)
 - (2) C-3-0m: Downtown Office District with Housing (see SPUR, South of Market: A Plan for San Francisco's Last Frontier, June 1981, p. 64 or Appendix B., p. B.4.7)
 - (3) C-3-R: Downtown Retail (see Note (b)(1), p. 105 or Appendix B., p. B.1.7)
 - (4) C-3-C: Downtown General Commercial (See Note (b)(3))
 - (5) C-3-Gm: Retail, Entertainment, Offices and Housing (see Note (b)(2), p. 67 or Appendix B., p. B.4.11)
 - (6) C-3-S: Downtown Support (see Note (b)(3))
 - (7) C-2: Community Business (see Planning Code, Section 210.2, p. 104 or Appendix B., p. B.1.6)
 - (8) RC-3m: Moderate Intensity Residential-Commercial (see Note (b)(2), pp. 65 and 66 or Appendix B., pp. B.4.9 and B.4.10)
 - (9) RC-4m: High Intensity Residential-Commercial (see Note (b)(8))
 - (10) RC(1): Industrial and Residential/Commercial (see Department of City Planning, Guiding Downtown Development, July 1982, p. 26 or Appendix B., p. B.5.26)
 - (11) RC(2): Residential-Commercial with Provision for Protection of Existing Apartment and Residential Hotel Uses (see Note (b)(10), p. 28 or Appendix B., p. B.5.28)
 - (12) S(1): Mixed Use Housing and Commercial (Offices) (see Note (b)(2), p. 66 or Appendix B., p. B.4.10)
 - (13) S(2): Special Low Intensity Mixed Use (see Note (b)(12))
- (c) See Planning Code Reference Section(s) in left column of Table for complete descriptions of major uses. See also Planning Code for complete descriptions of other uses not listed in Table, as follows: Sec. 209.5, Open Recreation and Horticulture; Sec. 209.b, Public Facilities and Utilities; Sec. 209.7, Vehicle Storage and Access; 209.9 and 227, Other Uses; Sec. 220, Laundering, Cleaning and Pressing; Sec. 221, Assembly and Entertainment; Sec. 222, Home and Business Services; Sec. 223, Automotive; Sec. 224, Animal Services; Sec. 225, Wholesaling, Storage, Distribution and Open-Air Handling of Materials and Equipment; Sec. 226, Manufacturing and Processing.
- (d) Except as may be permitted or conditionally permitted under Planning Code Section 209.8, Commercial Establishments

SOURCE: Environmental Science Associates, Inc.

TABLE III.1: USES PERMITTED IN PRIMARY STUDY AREA, BY USE DISTRICT AND ALTERNATIVE (a)

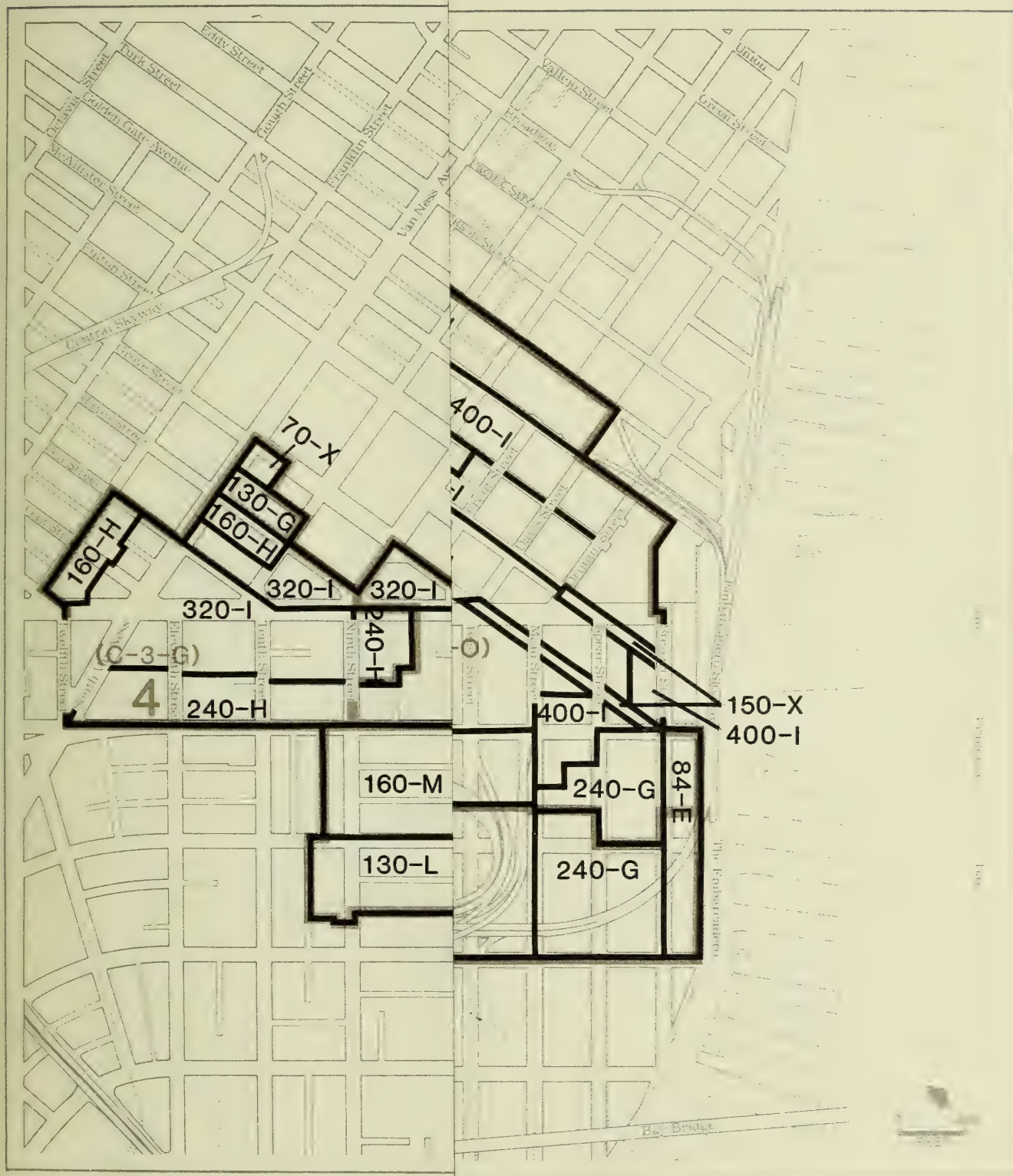
Planning Code Reference Section(s) (c)	Summary Description of Major Uses Permitted (c)	Use Districts(b) (and Alternative(s) in Which Each Appears)													
		Downtown Commercial					Community Business	Residential- Commercial Combined			Special Mixed Use				
		C-3-0 (1-5)	C-3-0m (4)	C-3-R (1-5)	C-3-G (1-5)	C-3-Gm (4)	C-3-S (1-3,5)	C-2 (4)	RC-3m (4)	RC-4 (4)	RC-4m (4)	RC(1) (5)	RC(2) (5)	S(1) (4)	S(2) (4)
209.8(a) and (c), 218(a) and (b), 209.8(b) and (d), 218(a) and (b).	<u>RETAIL SALES AND PERSONAL SERVICES</u>														
	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
	P	P	P	P	P	P	P	C	C	C	C	C	-	-	-
209.8(a)-(d), 219.	<u>OFFICES (Professional and Business)</u>	P	P	P	P	P	P	P	N(d)	N(d)	N(d)	N(d)	P	P	C
226(a).	<u>LIGHT MANUFACTURING (with restrictions and exeptions)</u>	P	P	P	P	C	P	P	C	N	C	N	N	C	P
<u>PARKING</u>															
209.7(a) and (c), 223.8	Parking Lot, privately owned	C	C	C	C	C	P	P	C	C	C	C	C	C	C
209.7(a) and (c), 223(m) and (n).	Parking garage, privately owned, completely enclosed	C	C	C	C	C	C	P	C	C	C	C	C	C	C

TABLE III.1: USES PERMITTED IN PRIMARY STUDY AREA, BY USE DISTRICT AND ALTERNATIVE (a)

NOTES:

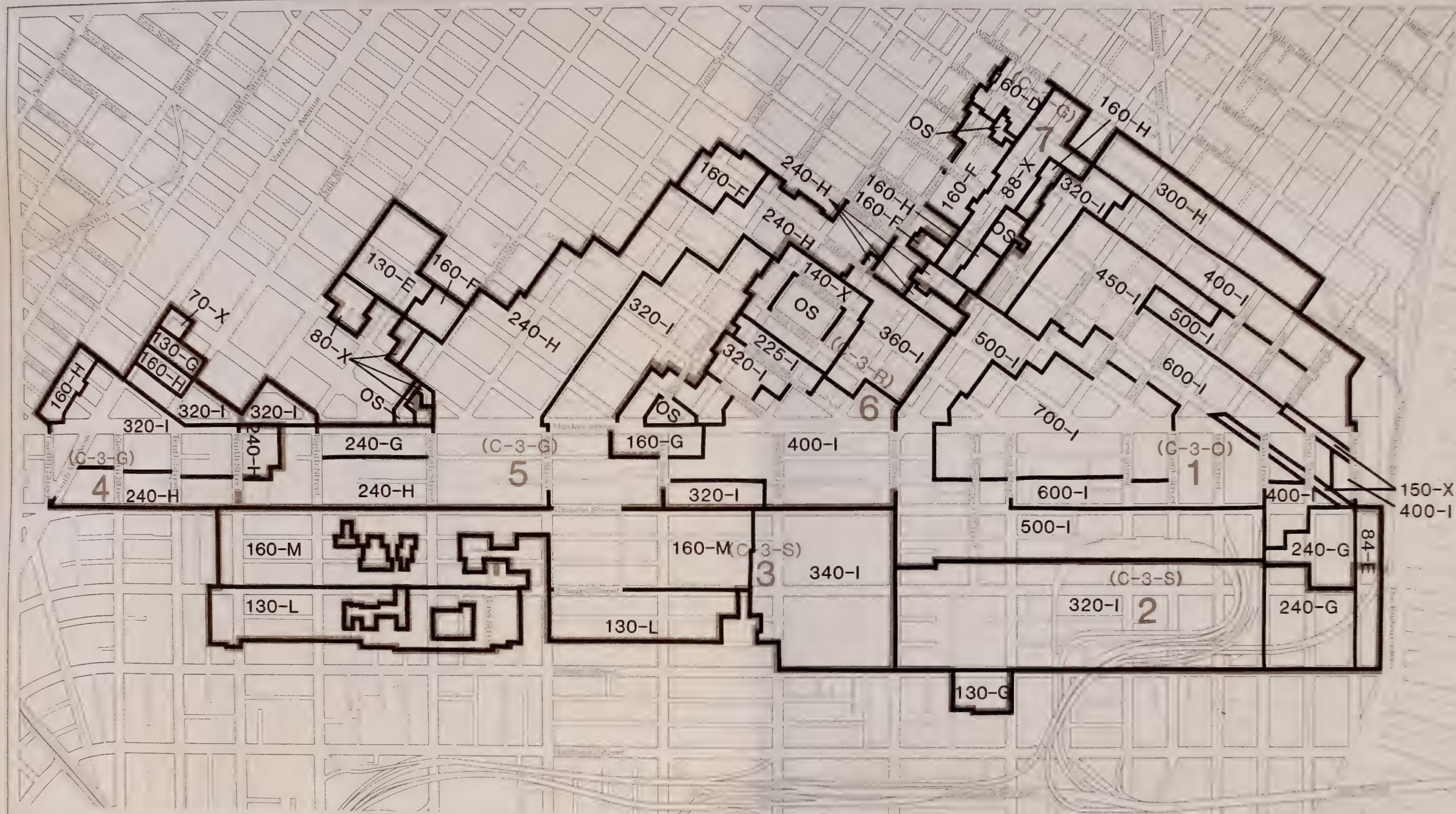
- (a) The explicit or inferred status of each use listed in the Table, for each use district and Alternative shown, is indicated by the following symbols: "P" = Principally Permitted Use; "C" = Conditionally Permitted Use; "N" = Use Not Permitted. A blank ("") indicates that the status of a use is neither explicit nor reasonably inferred from the description(s) of the applicable Alternative(s).
- (b) Use districts are described as follows:
- (1) C-3-0: Downtown Office District (see Planning Code, Section 210.3, p. 104 or Appendix B, p. B.1.6)
 - (2) C-3-0m: Downtown Office District with Housing (see SPUR, South of Market: A Plan for San Francisco's Last Frontier, June 1981, p. 64 or Appendix B., p. B.4.7)
 - (3) C-3-R: Downtown Retail (see Note (b)(1), p. 105 or Appendix B., p. B.1.7)
 - (4) C-3-G: Downtown General Commercial (see Note (b)(3))
 - (5) C-3-Gm: Retail, Entertainment, Offices and Housing (see Note (b)(2), p. 67 or Appendix B., p. B.4.11)
 - (6) C-3-S: Downtown Support (see Note (b)(3))
 - (7) C-2: Community Business (see Planning Code, Section 210.2, p. 104 or Appendix B., p. B.1.6)
 - (8) RC-3m: Moderate Intensity Residential-Commercial (see Note (b)(2), pp. 65 and 66 or Appendix B., pp. B.4.9 and B.4.10)
 - (9) RC-4m: High Intensity Residential-Commercial (see Note (b)(8))
 - (10) RC(1): Industrial and Residential/Commercial (see Department of City Planning, Guiding Downtown Development, July 1982, p. 26 or Appendix B., p. B.5.26)
 - (11) RC(2): Residential-Commercial with Provision for Protection of Existing Apartment and Residential Hotel Uses (see Note (b)(10), p. 28 or Appendix B., p. B.5.28)
 - (12) S(1): Mixed Use Housing and Commercial (Offices) (see Note (b)(2), p. 66 or Appendix B., p. B.4.10)
 - (13) S(2): Special Low Intensity Mixed Use (see Note (b)(12))
- (c) See Planning Code Reference Section(s) in left column of Table for complete descriptions of major uses. See also Planning Code for complete descriptions of other uses not listed in Table, as follows: Sec. 209.5, Open Recreation and Horticulture; Sec. 209.b, Public Facilities and Utilities; Sec. 209.7, Vehicle Storage and Access; 209.9 and 227, Other Uses; Sec. 220, Laundering, Cleaning and Pressing; Sec. 221, Assembly and Entertainment; Sec. 222, Home and Business Services; Sec. 223, Automotive; Sec. 224, Animal Services; Sec. 225, Wholesaling, Storage, Distribution and Open-Air Handling of Materials and Equipment; Sec. 226, Manufacturing and Processing.
- (d) Except as may be permitted or conditionally permitted under Planning Code Section 209.8, Commercial Establishments

SOURCE: Environmental Science Associates, Inc.



**FIGURE III. 1:
ALTERNATIVE 1
HEIGHT AND BULK DISTRICTS**

SOURCE: San Francisco Planning Code and
Environmental Science Associates, Inc.



BULK LIMITS:	DISTRICT SYMBOL ON MAP	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY (in feet)	MAXIMUM PLAN DIMENSIONS (in feet)	
			LENGTH	DIAGONAL DIMENSION
	A	40	110	125
	B	50	110	125
	C	80	110	125
	D	40	110	140
	E	65	110	140
	F	80	110	140
	G	80	170	200
	H	100	170	200
	I	150	170	200
	J	40	250	300
	K	60	250	300
	L	80	250	300
	M	100	250	300

OS See Planning Code Section 290.

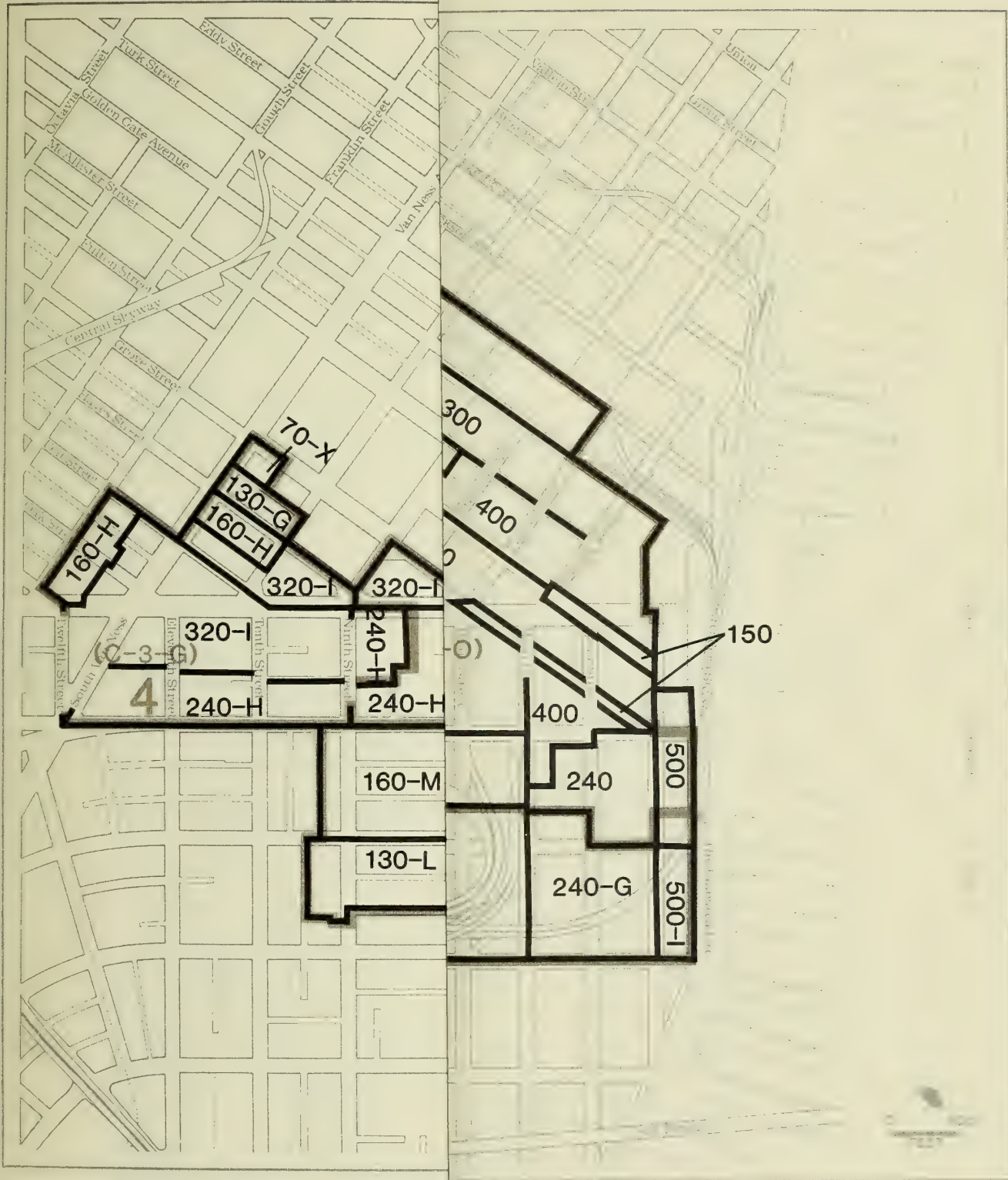
X This table not applicable.
See Planning Code Section 260(a)3.

HEIGHT LIMITS: Shown on map in feet

NOTE: Existing Use Districts are shown in brown

FIGURE III. 1:
ALTERNATIVE 1
HEIGHT AND BULK DISTRICTS

SOURCE: San Francisco Planning Commission
Environmental Science Associates, Inc.

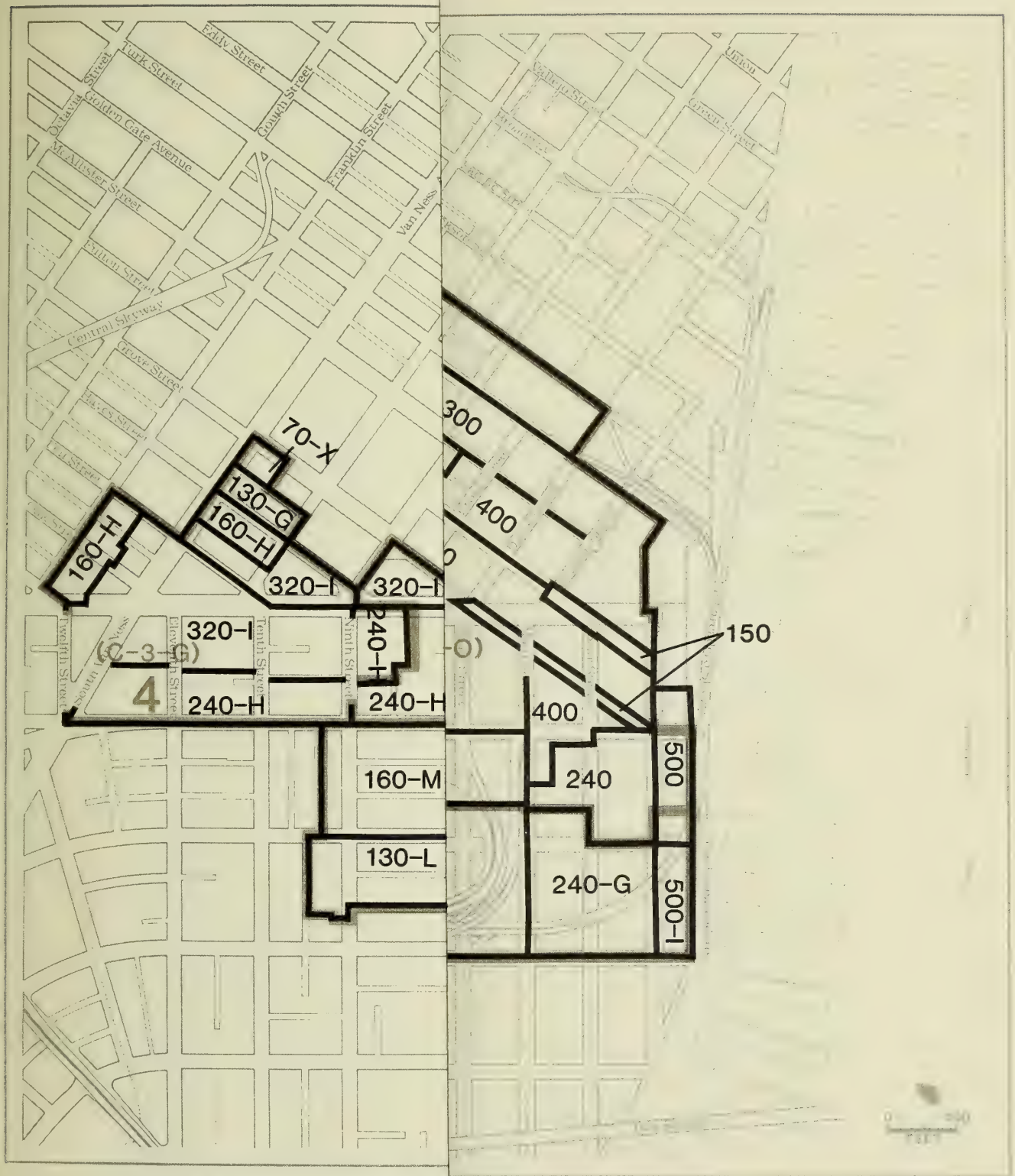


BULK LIMITS IN C-3-S, C-3-R AND C-3-G DISTRICTS: *	DISTRICT SYMBOL ON MAP	HEIGHT AND DIMENSIONS
	A	
	B	
	C	
	D	
	E	
	F	
	G	
	H	
	I	
	J	
	K	
	L	
	M	

NOTE: Existing Use Districts are shown in brown.

**FIGURE III. 2:
ALTERNATIVE 2
HEIGHT AND BULK DISTRICTS**

SOURCE: San Francisco Planning Code and
Environmental Science Associates, Inc.



BULK LIMITS IN C-3-S, C-3-R AND C-3-G DISTRICTS: *	DISTRICT SYMBOL ON MAP	HEIGHT AND DIMENSIONS
	A	
	B	
	C	
	D	
	E	
	F	
	G	
	H	
	I	
	J	
	K	
	L	
	M	

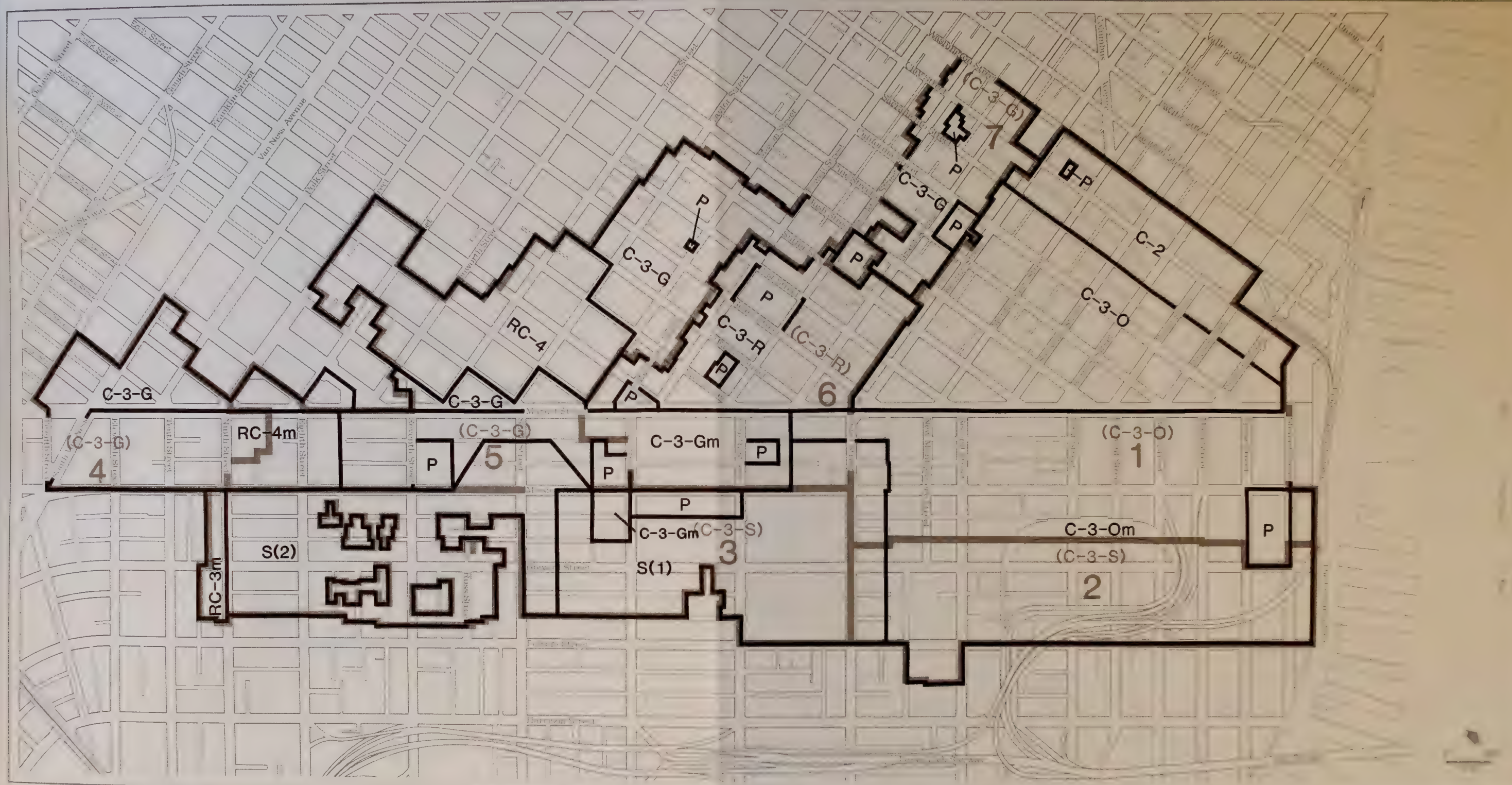
NOTE: Existing Use Districts are shown in brown.

**FIGURE III. 2:
ALTERNATIVE 2
HEIGHT AND BULK DISTRICTS**

SOURCE: San Francisco Planning Code and
Environmental Science Associates, Inc.

TABLE III.2: SUMMARY OF ALTERNATIVES

Regulatory Parameter	Alternative				
	1	2	3	4	5
	Planning Code	Chamber of Commerce	Proposition "O"	San Franciscans for Reasonable Growth	Department of City Planning
PART I: BASIC LIMITS ON BUILDING FORM AND USE CONSIDERED IN CONSTRUCTION FEASIBILITY ANALYSES (SEE APPENDIX D) AND REAL ESTATE DEVELOPMENT FORECASTS (SEE APPENDIX G), AND ADDRESSED IN MITIGATION MEASURES (SEE SECTION VII)					
1. Floor Area Ratio (FAR):	C-3-0 14:1 Basic; No Max. C-3-R 10:1 Basic; No Max. C-3-G 10:1 Basic; No Max. C-3-S 7:1 Basic; No Max. Other NA	12:1 Basic; 18:1 Max. 8:1 Basic; 12:1 Max. 8:1 Basic; 12:1 Max. 7:1 Basic; 10.5:1 Max. NA	8:1 Basic; 14:1 Max. 7:1 Basic; 10:1 Max. 5:1 Basic; 8:1 Max. 5:1 Basic; 8:1 Max. NA	7:1 Basic; 14:1 Max. 5:1 Basic; 10:1 Max. 5:1 Basic; 10:1 Max. NA Varies (a)	12:1 Basic; 17:1 Max. (b) 6:1 Basic; 9:1 Max. (b) 8:1 Basic; 12:1 Max. (b) 6:1 Basic; 8:1 Max. (b) 8:1 Basic; 12:1 Max. (b)
2. Height Limits:	See Figure III.1	See Figure III.2	See Figure III.3	See Figure III.5	See Figure III.7
	C-3-0 84 - 700 ft. C-3-R 140 - 400 ft. C-3-G 70 - 320 ft. C-3-S 130 - 340 ft. Other NA	150 - 575 ft. (c) 140 - 400 ft. 70 - 320 ft. 130 - 340 ft. NA	84 - 260 ft. 130 - 150 ft. 70 - 130 ft. 84 - 130 ft. NA	150 - 575 ft. 120 - 160 ft. 70 - 240 ft. NA 40 - 575 ft.	84 - 700 ft. 120 - 320 ft. 50 - 320 ft. 84 - 550 ft. 30 - 220 ft.
3. Bulk Limits:	See Figure III.1	See Figure III.2 (c)	See Figure III.3	See Figure III.5	See Figure III.7
	Boundaries of bulk districts conform to those for height districts for all Alternatives. As shown in Figures referenced above, bulk limits for all Alternatives generally consist of limits on maximum horizontal facade dimension (width) and limits on maximum horizontal plan dimension.				In addition to the type of bulk controls described at left for Alternatives 1-4, Alternative 5 would include a type of control (Bulk District "S") that would base bulk limits on building height, rather than height district.(d)
4. Use Districts:	See Figure II.C.1	See Figure II.C.1	See Figure II.C.1	See Figure III.4	See Figure III.6
	Use districts in each Alternative are shown in Figures referenced above. permitted in each use district and Alternative are shown in Table III.1.			Uses permitted, conditionally permitted, and not	
	Alternatives 1 through 3 would contain identical use districts (C-3-0; C-3-R; C-3-G and C-3-S) and use district boundaries (though height and bulk limits within those boundaries would differ, see Parts I.2 and I.3, above).			Alternative 4 would modify use districts and use district boundaries generally to conform to a rezoning proposed for the Tenderloin area by the North of Market Coalition and to the use districts.	Alternative 5 would extend the C-3-R use district into the present C-3-G use district in the vicinity of Kearny St., and would change portions of the present C-3-G and C-3-S use districts in the Tenderloin and South-of-Market areas to Residential/Commercial.



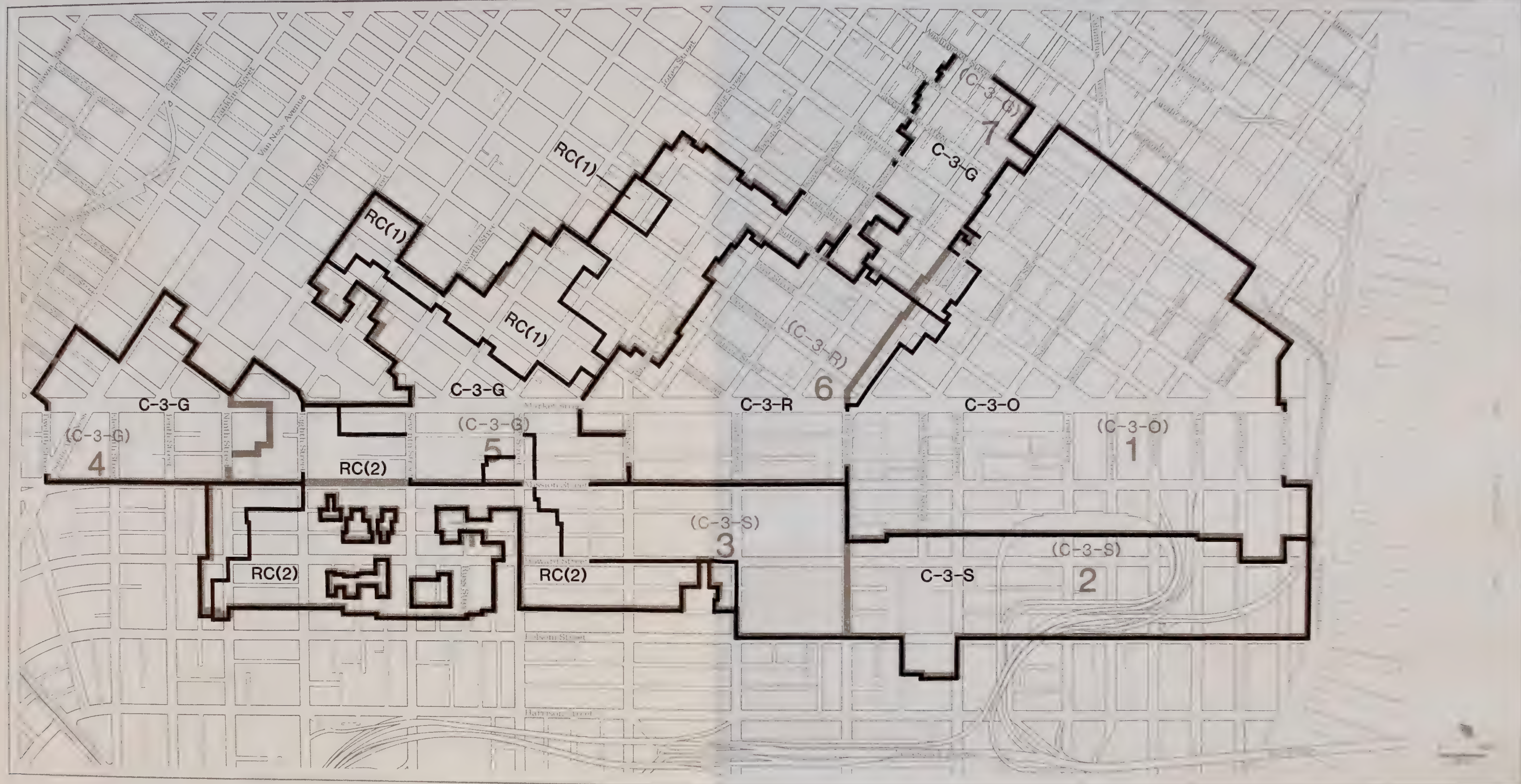
NOTE:

Existing Use Districts are shown in brown.

See Table III.1 for explanation of Use District symbols.

**FIGURE III. 4:
ALTERNATIVE 4
USE DISTRICTS**

SOURCE: Environmental Science Associates, Inc.



NOTE:

Existing Use Districts are shown in brown.

See Table III.1 for explanation of Use District symbols.

FIGURE III. 6:
ALTERNATIVE 5
USE DISTRICTS

SOURCE: San Francisco Department of City Planning and Engineering Services Associates, Inc.

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

<u>Regulatory Parameter</u>	<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>	<u>Alternative 4</u>	<u>Alternative 5</u>
<u>PART I: (Continued)</u>					

4. Use Districts:
(continued)

shown in the SPUR plan for the South of Market; and would extend the C-2 area of Jackson Square southward into the existing C-3 (e).

PART II: REQUIREMENTS AND FAR BONUSES RELATED TO HOUSING, CONSIDERED IN CONSTRUCTION FEASIBILITY ANALYSES AND REAL ESTATE DEVELOPMENT FORECASTS, AND ADDRESSED IN MITIGATION MEASURES

1. Development Requirements

None

None

None

Office developer must provide for substantial rehabilitation of existing housing units or construction of new housing units at rate of one unit for every 4 employees in new office development. Affordability of new units must correspond to income levels of proposed office project occupants.

Developer of more than 50,000 sq. ft. of office space must provide 640 sq. ft. of housing for every 1,000 sq. ft. of office with minimum of approximately 0.9 units per 1,000 sq. ft. of office. Housing may be on or off office site; would be subject to City-wide requirements for providing low- and moderate-income housing, where feasible.

OR

Office developer must pay in-lieu fee to City equal to no. employees x .25 x average downpayment for S.F. housing unit.

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

PART II: (Continued)

<u>Regulatory Parameter</u>	<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>	<u>Alternative 4</u>	<u>Alternative 5</u>
1. Development Requirements (Continued)				(Above formulas apply to total new office employment at site (including conversions); not to net new office employment at site.)	
2. Development Bonuses/ Allowances	None	Allows office floor area bonus for net new housing construction up to maximum of 100,000 sq. ft. on a 1:1 basis for low- to moderate-income housing anywhere in City, and for market rate housing in C-3. Bonus for net low- to moderate-income housing in C-3 allowed on a 2:1 basis up to a maximum of 100,000 sq. ft.	Allows floor area bonus on 1:1 basis for net new housing construction; no maximum limit on bonus, but new housing must be within 500 ft. of office site. No additional bonus for low- to moderate-income housing.	Allows same floor area bonus as Alternative 2. Allows TDR for preservation of unsafe residential hotels through same mechanism as provided for preservation of "meritorious buildings" (see Parts III.1 and 2, below).	Allows additional FAR bonus for residential uses incorporated in office/residential projects in C-3 as follows: in C-3-0, 5:1; C-3-R, 3:1; C-3-G, 4:1; and C-3-S, 2:1.
3. Additional Measures Related to Public Housing Policy	None	None	None	City should protect and encourage residential uses adjacent to downtown (see Part I.4, above).	City should expedite processing of housing projects; make City-owned land available for housing development; rezone certain areas near downtown to encourage housing development; protect residential uses adjacent to downtown from competing commercial encroachment (see Part I.4, above); and change open space requirements, FAR calculations and rear yard requirements to encourage housing. (f)

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

PART III: REQUIREMENTS AND FAR BONUSES RELATED TO PRESERVATION OF ARCHITECTURAL RESOURCES, AND CONSIDERED IN REAL ESTATE DEVELOPMENT FORECASTS AND MITIGATION MEASURES

Regulatory Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
1. Transfer of Development Rights (TDR) from Architectural Resources to New Development Projects	Allowed throughout City between adjacent sites, but only from City Landmarks. Maximum amount of transfer determined by unused basic FAR at transferor site on 1:1 basis.	Allowed from "designated historic or architecturally significant buildings" and Heritage A and B buildings within C-3, to other sites in C-3, on a 2:1 basis.	No allowance provided for TDR (see Part III.2, below).	Allowed from City Landmark or Structure of Merit anywhere in City to development sites in C-3, on a 1:1 basis.	Allowed from eligible resource (Architecturally and/or Historically Significant Buildings) in same C-3 districts, or to sites in "special development districts" (Study Areas 2 and 4). Maximum FAR of project in special development district may be increased to 12:1 by TDR from eligible site in C-3-0.
2. Allowances and Bonuses in addition to TDR	None	Bonus for "preservation of 'A' buildings"; on 1:1 basis up to maximum bonus of 100,000 sq. ft.	Bonus for preservation "in perpetuity" of City Landmark or National Register Landmark (donor resource) within 500 ft. of donee site in C-3; 50,000 sq. ft. minimum bonus; 100,000 sq. ft. maximum bonus.	To "insure an effective incentive for preservation", the permitted basic floor area increase due to TDR may be further increased by 25%, up to maximum FAR.	To facilitate preservation and restoration of eligible resources, City Planning Commission may award bonus not to exceed public area of preserved/restored resource, plus 1/2 private area of resource.
3. TDR and Bonus Requirements Related to Protection of Resources at Development Site and Architectural Resource Site	No upgrading or long-term protection of resource at transferee site is required; no protection of historic resources at transferor site is provided.	Same as Alternative 1	Donor resource (see Part III.2, above) must be "preserved in perpetuity"; no protection of historic resources at donee site is provided, except as shown in Part III.2, above.	Owner of transferor resource must guarantee its "permanent retention and maintenance"; no protection of historic resources at transferee site is provided, except as shown in Part III.2, above.	TDR from eligible transferor resource would not be allowed if development at transferee site would result in "destruction or defacement of another significant building"; TDR would be conditional on restoration and/or reinforcement of transferor resource, "if needed." No protection of historic resources at donee site is provided except as shown in Part III.2, above.

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

<u>PART III: (Continued)</u>					
<u>Regulatory Parameter</u>	<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>	<u>Alternative 4</u>	<u>Alternative 5</u>
4. Additional Measures Related to Architectural Preservation Policy	Preservation of Historical, Architectural and Aesthetic Landmarks, as provided in City Planning Code, Article 10.	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1, plus establishment of "conservation districts" with special requirements, including possible conditional use review. (g)
<u>PART IV: ADDITIONAL REQUIREMENTS AND FAR BONUSES CONSIDERED IN CONSTRUCTION FEASIBILITY ANALYSES AND REAL ESTATE DEVELOPMENT FORECASTS, AND ADDRESSED IN MITIGATION MEASURES</u>					
1. Rapid Transit Access or Proximity	Bonus Allowed; No Requirement (BA) (h)	BA (i)	No Requirement; No Bonus Allowed (NRB) Bonuses that would improve the "pedestrian environment" or "encourage public transit usage" "could be adopted" under Alternative 3, but are not specified.	NRB	NRB
2. Parking Access	BA (h)	NRB		NRB	NRB
3. Multiple Building Entrances	BA (h)	NRB		NRB	NRB
4. Sidewalk Widening	BA (h)	May be required, depending on existing sidewalk width.		NRB	NRB
5. Shortened Walking Distance	BA (h)	BA (i)	}	NRB	NRB
6. Plaza	BA (h)	BA (i)		BA (j)	See Part IV.II, below.
7. Observation Deck	BA (h)	NRB		NRB	Controlled by bulk limits (see Part I.3, above).
8. Side Setbacks at Upper Floors	BA (h)	Required (i)		NRB	
9. Low Coverage at Upper Floors		BA		NRB	
10. Energy Conservation	NRB	BA	NRB (but "could be adopted")	BA (j)	NRB

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

PART IV: (Continued)					
Regulatory Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
11. Recreation and Open Space	NRB (except see Parts IV.4, 6 and 7, above)	NRB (except see Parts IV.4 and 6, above)	NRB (except see Parts IV.4, 6 and 7 above)	NRB (except see Part IV.6, above)	Required; may be provided on-site or off-site in or adjacent to same C-3 use district. Required ratios of open space to floor area would be as follows: C-3-0, 1:25; C-3-R, 1:40; C-3-G, 1:30; C-3-S, 1:50. (k)
12. Art Works	NRB	NRB	NRB	NRB	Required; investment to be at least 1% of construction cost of project. (l)
13. Small-Scale Retail at Street Level	NRB	NRB (but "should be encouraged")	NRB (but "could be adopted")	NRB	May be required by DCP in C-3-0, C-3-R, and C-3-G use districts. (m)
14. Protect Sunlight Access to Certain Public Spaces	NRB	NRB (but "should be considered")	NRB (but "could be adopted")	NRB	Required; protection of sunlight penetration angles along certain streets provided. (n)
15. Transportation Facilities	NRB (except as provided in IV.1 - IV.5, above)	NRB	NRB	BA (j)	Required increase in off-street delivery and loading facilities. (o)
PART V: ADDITIONAL PROVISIONS OF ALTERNATIVES THAT ARE CONSIDERED IN MITIGATION MEASURES AND THAT ARE ASSUMED NOT TO AFFECT BASIC FORECAST AMOUNTS, TYPES, OR DISTRIBUTIONS OF DEVELOPMENT UNDER ANY ALTERNATIVE					
1. Urban Design	None	Institute design review procedure that would limit bank walls; provide special design treatment at street level; protect views and view corridors; and improve building access. Require design review.	Measures for "improvement of pedestrian environment" may be adopted, but are not specified.	None	Strengthen urban design standards; allow architectural projections; require street trees; encourage design of more interesting rooftops; and revise rules for calculation of floor areas to exclude non-structural exterior features.

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

PART V: (Continued)		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Regulatory Parameter						
2. Transportation		None	Implement Transportation Systems Management Program including flextime, ride sharing, promotion of transit use, and parking management. Implement Downtown Transportation Improvement Assessment District.	Measures for "encouragement of public transit usage" may be adopted but are not specified.	None (see IV.15, above)	City should implement "Transit First" policy. Building managers and employers should encourage transit use. Project sponsor should limit commuter parking, contribute funds for transit service, employ transportation broker, include bike and moped parking, contribute to transportation studies. City would establish three Downtown Parking Districts that would require new commuter parking to be in the periphery of downtown, and would seek the conversion of existing long-term commuter parking in the downtown core to short-term use.

KEY TO SYMBOLS:

NA: Not Applicable; BA: Bonus Allowed (No Requirement); NRB: No Requirement, No Bonus Allowed; TDR: Transfer of Development Rights

NOTES:

- (a) See South of Market: A Plan for San Francisco's Last Frontier, San Francisco Planning and Urban Research Association, June 1981 (hereinafter, SFUR), p. 65 (Appendix B, p. B.4. 9-15), Areas 1, 3, 4, 5 and 8 for basic and maximum FARs.
- (b) Maximum bonuses shown include housing allowances; additional allowances may be permitted for historic preservation and urban parks (see Appendix B, pp. B.5.4 and B.5. 30).
- (c) Alternative 2 would change height and bulk district boundaries and limits in C-3-0 District only (see Appendix B, p. B.2.3). Height and bulk limits in other C-3 districts would be the same as in Alternative 1.
- (d) See Guiding Downtown Development, San Francisco Department of City Planning, July 1982 (hereinafter, GDD), pp. 10-13 (Appendix B, pp. B.5. 10-13) for detailed description of Alternative 5 bulk controls.

TABLE III.2: SUMMARY OF ALTERNATIVES (Continued)

NOTES: (Continued)

- (e) See Appendix B, pp. B.4. 8-11 for detailed descriptions of Tenderloin and South of Market use district modifications; See Appendix B, pp. B.4.3. for C-2/C-3 use district modifications.
- (f) See GDD, pp. 24-28 (Appendix B, pp. B.5. 24-28) for detailed descriptions of policy measures.
- (g) See GDD, pp. 30, 31 (Appendix B, pp. B.5. 30, 31) for detailed descriptions of conservation districts.
- (h) See Planning Code, Section 126, pp. 21-26 (Appendix B, pp. B.1. 1-6) for descriptions of bonus provisions.
- (i) See Downtown Growth Management Program, Bolles Associates and Livingston & Associates, October 1979, pp. 22-26 (Appendix B, pp. B.2. 4-8) for descriptions of bonus provisions and development requirements.
- (j) See Appendix B, p. B.5. 1 for descriptions of bonus provisions.
- (k) See GDD, pp. 19-22 (Appendix B pp. B.5. 19-22) for description of open space and recreation requirements.
- (l) See GDD, p. 17 (Appendix B, p. B.5. 17) for required art works.
- (m) See GDD, pp. 18, 19 (Appendix B, pp. B.5. 18, 19) for required retail.
- (n) See GDD, pp. 13-15 (Appendix B. pp. B.5. 13-15) for required sunlight access.
- (o) See GDD, p. 23 (Appendix B, p. B.5. 23) for requirements for off-street goods delivery facilities in new developments.

IV. ENVIRONMENTAL SETTING

A. LOCAL AND REGIONAL PLANS AND REQUIRED APPROVALS

SAN FRANCISCO MASTER PLAN

In 1932, the voters of San Francisco adopted the Charter of the City and County of San Francisco that is still effective today. One of the functions and duties of the City Planning Commission mandated by the Charter is "to adopt and maintain, including necessary changes therein, a comprehensive long-term, general plan for the improvement and future development of the City and County, to be known as the Master Plan."/1/

The first Master Plan prepared in response to this Charter was adopted by the City Planning Commission in 1945. The principal elements pertained to land use, transportation, redevelopment, and housing. In the 50's and 60's, the Master Plan was updated and revised, and was expanded to include elements pertaining to public facilities and recreation and parks. In the 70's and early 80's, a new series of revisions was adopted to update and expand the Master Plan and to include elements required by an amendment to the State Planning and Zoning Law and to include elements required by an amendment to the State Planning and Zoning Law which applied to chartered cities as well as other local governmental jurisdictions./2/

The elements of the Master Plan are identified as Land Use, Commerce and Industry, Transportation, Residence (Housing), Urban Design, Recreation and Open Space, Environmental Protection, Community Safety, and Energy. Special area plans have also been adopted. One of these — The Northeastern Waterfront Plan — pertains to a portion of the C-3 Use District (Downtown Study Area). These elements of the Master Plan are incorporated herein by reference/3/, and pertinent sections are summarized below.

Each element of the Master Plan contains statements of goals, objectives, and policies which represent the current official, broad and general recommendations of the City Planning Commission for the development of the City in accordance with present and

IV. Environmental Setting

future needs. In this Section, those aspects of the Master Plan which pertain to or affect the Downtown Study Area are identified and described. In Section V.A., the Alternatives will be assessed in terms of their conformity with the Master Plan policies. Although not applicable to chartered cities of less than 2,000,000 persons, the State Planning and Zoning Law requires that zoning plans be consistent with general, or master, plans./4/ As some of the Alternatives would require changes in the Planning Code (zoning ordinance) of the City, inconsistencies between the Master Plan and each Alternative will be identified.

Land Use Element

The Land Use Element contains a Citywide Land Use Plan, objectives, principles, and standards, and a map depicting the Plan. It differs in format from the subsequently described elements of the plan because it is the only element which was not completely revised during the 70's and early 80's. The plan was adopted on January 29, 1953 and amended on April 10, 1958. Only the section pertaining to residential density standards has been updated by the Residence element as first adopted in April 1971.

The Citywide Land Use Plan contains two objectives which are pertinent to the Downtown Study Area. The first (Objective 2) is stated as: "Improvement of the city as a place for commerce and industry by making it more efficient, orderly, and satisfactory for the production, exchange and distribution of goods and services, with adequate space for each type of economic activity and improved facilities for the loading and movement of goods."

The Land Use Plan divides the city into two types of areas — working areas and community (residential) areas. The working areas include all of the Downtown Study Area. The objective (No. 3) is described as: "Organization of the two principal functional parts of the city — the working areas and the community areas — so that each may be clearly distinguished from but complimentary to the other, and so that the economic, social, and cultural development of the city may be furthered." The Plan states that this "natural division of the city into two distinct functional areas — one primarily for production, distribution and services, and the other for residential purposes and the community facilities which are closely related to residential activities — should be recognized and encouraged."

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The Plan describes the working areas, in part, as follows: "Except in a few isolated instances the entire range of commercial and industrial activities of citywide importance is confined to the eastern flank of the city between the Bay and the first tier of hills rising west of the Bay. The types of use for which land is allocated in the working areas are classified into four categories: 1) Downtown, 2) Businesses and Services, 3) Light Industry, and 4) General Industry. The Downtown District contains the downtown shopping, entertainment and financial sections of the city as well as some of the downtown apartment and hotel quarters." This area is shown as extending south of Market Street to Stevenson or Jessie Street. "Surrounding this district on three sides is the primary area devoted to and designated for Business and Services. These are businesses and uses which supplement and are necessary to the total economy of the downtown area." Cited as examples are "the varied wholesale activities south of Market Street", shown in a band extending between Stevenson and Jessie Streets on the north and Howard Street on the south. "The other designated uses are those light and general industries which adjoin the harbor and occupy the flat land along the Bay shore of the city." The light industries are shown in a band generally between Howard and Harrison Streets, and the area to the south is indicated for general industry. No residential uses are mapped in these areas.

Commerce and Industry Element

This element was adopted by the City Planning Commission in 1978./5/ It "sets forth objectives and policies that address the broad range of economic activities, facilities and support systems that constitute San Francisco's employment service base". The plan is framed within three overriding goals which call for continued economic vitality, social equity to assure that all segments of the San Francisco labor force benefit from economic growth, and maintenance and enhancement of the "unique and attractive" environment of the City. The narrative explanation states that "the pursuit of employment opportunities and economic expansion must not be at the expense of the environment appreciated by all."

Three general objectives of the plan "call for managing economic growth and change to ensure enhancement of the total city environment, maintaining a sound and diverse economic base and fiscal structure, and providing expanded employment opportunities for city residents, particularly those that are unemployed".

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Specific objectives pertain to major economic sectors within San Francisco which include manufacturing and industry, maritime activities, and neighborhood commercial retailing. Specific objectives most pertinent to the Downtown Study Area pertain to office/administrative services, specialized regional retail trade, government services, and visitor trade.

Objective 6 pertains to the Downtown Office sector, as follows: "Maintain and improve San Francisco's position as a prime location for financial, administrative, corporate, and professional activity." The plan describes the downtown financial district as the City's most active employment center and a major provider for employment opportunities in the City. Although the plan recognizes that many jobs recently created have gone to non-San Francisco residents, it states that the number of jobs available to residents is considerable and significant, and that the vitality of this large employment section should be maintained.

Policy 1 under this objective states: "Encourage continued growth of prime downtown office activities so long as undesirable consequences of such growth can be avoided." The costs and consequences of concern include:

1. The impact of commuter traffic on consumption of land for parking, downtown congestion, air pollution, and energy usage
2. The impact of street level winds on the pedestrian
3. Noise from increased traffic
4. The impact of large buildings on the scale and character of the city
5. The impact of increased employment density on existing services and increased pressures on the limited housing supply

The plan states that if these costs are controlled within publicly acceptable limits, the City should encourage continued office growth. But, it points out, "concern over issues of public cost and environmental impact is not merely opposition to further development but a recognition that there are practical limits to that growth which would benefit residents and business alike."

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Policy 2 under this objective would: "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses." The plan states that specific site location requirements for the finance, insurance, and real estate employment groups which characterize the downtown office area are 1) centrality, 2) accessibility to modes of travel, and 3) agglomeration of a large number of interrelated, functionally supportive establishments. It further states that these requirements are met in the downtown office district.

The plan states that there is a public benefit from a concentration of uses in the downtown core because of "the greater ability to service the area with public transit, thus reducing the public and private costs of commuting." The plan states: "Land use controls should continue to encourage growth of professional office space within the downtown office district to insure a compact downtown office area."

The plan states that the physical proximity of supporting activities such as wholesalers, printers, and delivery firms, and land-extensive activities such as data processing, which are on the periphery of the downtown office area, "should be promoted to maintain the cohesiveness and viability of the downtown." The plan states that many supporting activities are in areas which will experience pressure from the demand for office space. It also states that residential communities in Chinatown and North Beach should be protected from encroachment of office development, and that office development in the C-3-S Use District (see Figure II.C.1) should not displace viable industrial and commercial uses but should use vacant parcels or buildings.

Policy 3 under this objective would: "Assure that downtown development is compatible with the design and character of San Francisco." The plan states that highrise office construction, the most visible growth within the downtown office sector, threatens the unique appearance and character of San Francisco, its human scale and its hills and topography. It refers to this phenomenon as "Manhattanization" and states that downtown San Francisco does not look or feel like the San Francisco of pre-World War II years (when the Russ Building, at 235 Montgomery Street, and the Telephone Building, at 140 New Montgomery Street, dominated the skyline).

The plan states: "While acknowledging that the technology of current downtown office development allows the construction of buildings many floors higher than those previously

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constructed, it is still possible to regulate and influence the height, bulk and architectural merit of office development in order to enhance the appearance of such buildings and to regulate site location to minimize view blockage and creation of street level winds — and to take steps to preserve those existing buildings of particular architectural merit.

"Guidelines and criteria for the height, bulk and design of downtown buildings should be continually reassessed and strengthened to assure that they are effective and adequate in prompting structures that complement the City's architectural heritage."

Policy 4 under this objective would: "Provide adequate amenities for those who live, work and use downtown." The narrative discussion states that the concept of bonusing, whereby more intense development is permitted in return for the inclusion of a variety of amenities such as open spaces, pedestrian access and spaces, and activity areas for public use, should be extended to insure the development of amenities for downtown residents as well as for the workday population. Land use controls should assume an adequate supply of convenience shopping and eating facilities." (Interim controls, which have been in effect since 1980, limit the use of bonuses for additional floor area to housing and hotel uses only.)

Policy 5 under the Downtown Office objective would: "Control traffic and congestion in the downtown area, particularly from private automobiles." The plan states that the increase in the number of people, automobiles, and delivery trucks in the congested core area, resulting from additional economic growth, could impede the number of economic benefits derived by San Franciscans from such growth. The plan advocates actions that discourage commuting by private automobile, and implementation of policies in the Transportation element relating to downtown (see pp. IV.A.7-10).

Objective 7 of the Commerce and Industry element pertains to the Downtown Retail sector as follows: "Improve Downtown San Francisco's position as a prime regional location for specialized retail trade. The general narrative states that: "The retail core, generally bounded by Powell, Sutter, Kearny and Market, has retained and enhances its position as the center for specialized comparison retail shopping within the Bay Area." Reasons cited for San Francisco being less susceptible to competition from outlying regional shopping centers than most downtown retail centers in other cities include:

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a large number of specialized and attractive shops, proximity of a relatively affluent work-day population, high usage by San Francisco residents, accessibility via an extensive regional and citywide transit system, and the nearby location of large hotels, restaurants and other establishments serving a large visitor population."

The plan states that: "This combination of factors must be maintained and improved if San Francisco is to keep its downtown retail center prosperous. Growth that is compatible with existing uses while reinforcing the function of the retail sector should be encouraged."

Policy 1 under this objective would: "Assure a strong interrelationship occurs between downtown specialty shopping, cultural entertainment, and visitor accommodation activities." The plan states:

"The proximity of the financial district, with its large work day population, spacious older and new hotels, and widely recognized restaurants give the downtown area exposure to a large and diverse population. The concentration of a large number of shops, hotels, and services within a short distance of the park at Union Square creates a pleasant pedestrian atmosphere. Circulation is relatively easy and the area is well served by local and regional transit.

"It is important that mutually supportive functions be developed in the downtown area. Promoting evening activities is very important to the health of the area. The linkage between functionally supportive land uses such as office development, visitor facilities, housing, and parking should be protected in evaluating new development proposals formulated for the downtown and adjacent districts."

Policy 2 of the Downtown Retail objective would: "Support the continued strength of high quality, specialty retail shopping facilities in the retail core." The narrative states that: "The amount of retail space allowed in new development outside the retail core should be controlled to assure that the strength of the core is not depleted by competing retail centers."

Policy 3 under this objective would: "Encourage shopper accessibility to the downtown area and physical design amenities at a pedestrian scale which will enhance the pedestrian

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climate." The policy would encourage street frontages at the ground level to be used almost exclusively for retail and consumer service uses, public improvements to be designed to provide greater appeal for pedestrians, and would discourage use of the automobile "as vehicle congestion inhibits foot traffic within the area." Finally, the narrative states that: "Policies of the Transportation Element should be pursued to assure continued accessibility of the retail district."

Objective 9 of the Commerce and Industry Element would: "Enhance San Francisco's position as a national and regional center for governmental, health, and educational services." Policy 1 would: "Promote San Francisco, particularly the Civic Center, as a location for local, regional, state and federal government functions." Although the Civic Center is not in the Downtown Study Area, it is surrounded by the Study Area on three sides. The plans would insure provision of an adequate amount of space in the Civic Center to service governmental activities without endangering surrounding residential areas.

Objective 10 would: "Enhance San Francisco's position as a national center for conventions and visitor trade." Policy 1 would: "Guide the location of additional tourist related activities to minimize their adverse impacts on existing residential, commercial, and industrial activities." The plan states: "The city should encourage additional visitor-oriented facilities to locate in those areas where visitor attractions and business and convention facilities are at the present time primarily concentrated." Except for the Fisherman's Wharf area, most of these activities are located in the Downtown Study Area and the adjacent Nob Hill area.

The Commerce and Industry Element contains no maps or diagrammed plans.

Transportation Element

This element of the Master Plan was adopted in its present form in 1972, and amended in 1977 and 1982./6/ Of the six sections of the Plan for Transportation, as the element is called, three are pertinent to the Downtown Study Area. These are the Mass Transit Plan, the Vehicle Circulation Plan, and the Downtown Transportation Plan. Each section consists of objectives and policies and related maps which describe key physical aspects of each plan. The Downtown Transportation Plan singles out the downtown area because of

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the unique problems associated with travel to, from, and within the "most important travel destination in the Bay Area."

The Transportation Element is based on several stated assumptions. One of these is that a desirable living environment and a prosperous business environment cannot be maintained if traffic levels continue to increase without limits. Various methods are suggested to control and reshape the impact of automobiles on the City and to use other means of transportation to improve the environment. The Plan for Transportation notes that continuing growth in employment in San Francisco is anticipated to result in a continuing growth in commuter travel to the City. An assumption of the Plan "is that, until an optimum employment level is determined, the City should assess each new transportation project on the basis of the ability of the transportation system to accommodate additional commuter travel and the impact on the quality of San Francisco's environment. To this end, the Plan assumes that all additions to the commuter load as a result of job growth in the City should be accommodated by public transit." It further states that "increased transit use is required to alleviate the congestion and undesirable side-effects of commuter travel through the City's neighborhoods."

The general objectives of the Plan are to: 1) "Meet the needs of all residents and visitors for safe, convenient and inexpensive travel within San Francisco and between the City and other parts of the region;" and 2) "Use the transportation system as a means for guiding development and improving the environment."

The Mass Transit Plan contains two objectives. The first would: "Give first priority to improving transit service throughout the City, providing a convenient and efficient system as a feasible alternative to automobile use." The second would: "Develop transit as the primary mode of travel to and from downtown and all major activity centers within the region." Mass transit policies would: "Build and maintain rapid transit lines from downtown to all suburban corridors and major centers of activity in San Francisco." Policy 2 states that where significant transit service is provided by buses, bridges and freeways should have exclusive bus lanes.

The Vehicle Circulation Plan recommends that the elevated portion of the Embarcadero Freeway between Howard Street and Broadway, as well as the Washington-Clay and

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Broadway ramps, be removed as soon as possible;/7/ that the Doyle Drive approach to the Golden Gate Bridge be improved for greater safety; that most east-west travel in the Western Addition and Inner Richmond be channeled onto Geary Boulevard and that when the Richmond rapid transit line is built, the capacity of the Pine Street-Bush Street couplet be reduced west of Van Ness Avenue. No new freeways are recommended.

The Downtown Transportation Plan contains four objectives:

1. "Maintain the type and level of transportation facilities and services appropriate to enhance the economic vitality of the downtown business and shopping district.
2. "Improve the downtown pedestrian circulation system, especially within the downtown core, to provide for the comfortable, safe and convenient movement of pedestrians.
3. "Provide convenient and high-capacity loading points for transit travelers.
4. "Improve facilities for freight deliveries and business services."

The Downtown Transportation Plan is concerned primarily with the need for proper circulation within downtown for vehicles and pedestrians and with the organization of transit terminals and parking facilities which form part of the downtown-oriented segments of the transportation system. The Plan states that the density of daytime population downtown and the resulting number of trips require that the movement of people take place in the most efficient and least space-consuming modes of transportation, such as public transit, and that automobile use should be controlled. "Every effort must be made to insure that better transit service is provided in order that transit increasingly becomes the mode for work and nonwork trips to and within the district. Regional policy and regional transportation funding should recognize San Francisco's unique transportation needs in sustaining its competitive business position as the primary financial and administrative center for the region."

Policies of the Plan would develop the downtown core as an automobile control area to reduce the impact of the private commuter vehicle; encourage short-term use of existing

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parking facilities by converting all-day commuter parking to short-term parking in areas of high demand; provide needed additional facilities in peripheral locations around but not within the downtown core; discourage new long-term parking spaces in and around downtown, and limit new long-term parking spaces to the number which would replace long-term parking eliminated by conversion to other uses. The Plan states that "firms requiring business fleets should be encouraged to find locations outside the downtown commercial district, or, alternatively, to locate their fleet parking in a separate garage outside downtown." The Plan recommends the further development of shuttle transit system within the downtown area. The Plan encourages the diversion of through traffic around the downtown core.

Concerning pedestrian movement, the Plan would facilitate pedestrian movement by adding capacity from traffic or parking lanes, by creating parallel through-block pedestrianways where they could provide convenient links without encouraging jaywalking. It would create a pedestrian network by closing some streets to private automobiles and/or trucks, at least during those hours when pedestrian volumes and demand are at critical levels. "Such a network should also include plazas, arcades, and open spaces as required in major new development." The Plan also encourages arcades under certain conditions, and recommends "clear zones" at intersections where sidewalks would be free of mail boxes, newspaper vending machines, police call boxes, and the like. Corner sidewalk bulbs, where the need for pedestrian reservoir space is acute, should be built, and sidewalks should be widened at transit stops.

Concerning freight deliveries, off-street facilities in all new developments should be provided in accordance with standards incorporated into the Planning Code. These standards should be continuously reviewed, states the Plan. The Plan would discourage access to off-street freight loading and service vehicle facilities from streets designated as transit preferential streets or pedestrian-oriented streets and alleys. Sidewalk elevators and sub-sidewalk vaults would be prohibited in new developments, and existing vaults and elevators would be removed where possible.

The Plan for Residence (Housing Element)

The Plan for Residence was adopted in its present format in 1971 /8/ and was amended and republished in 1975./9/ Revisions were made in 1980 and 1981 to reflect new state

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guidelines for housing elements. A proposed revision was published in January 1982 and modified in June 1982; the Plan was adopted on April 21, 1983 after certification of the Environmental Impact Report./10/ The revisions include new policies concerning housing supply, density of development, preservation of existing housing, housing cost, housing variety, and regional housing coordination. Some of the policies are the same as those in the 1975 Residence Element, some have been modified to reflect present goals, and some are new. In anticipation of adoption of the proposed revisions, this section will describe the Residence element under current consideration for adoption, as it pertains to the Downtown Study Area.

The Residence element, in its introduction, declares: "The City faces an extraordinary housing situation. Costs are among the highest in the nation. The vacancy rate remains persistently low. The growth of jobs and the desire of people . . . to live in San Francisco place added pressure on the city's housing stock." The element notes that the supply of affordable housing, however, is not expanding rapidly enough to match demand. High interest rates place home purchase beyond the reach of most San Franciscans. The federal government is cutting back funding so that adequate subsidies for new construction are not likely. These are factors, the introduction notes, over which the City has little or no control.

The element does state, however, that "the city can assure that sufficient sites exist for housing at locations acceptable to the public; provide land use incentives for the production of housing; assist, to a limited extent, in the financing of housing; and can establish a favorable regulatory climate for new housing construction."

The first objective of the element is: "To provide new housing for all income groups in appropriate locations." Policy 2 would "facilitate the conversion of underused industrial and commercial areas to residential use," and notes that opportunities exist close to downtown. Policy 3 would "promote the inclusion of housing in downtown commercial developments," and notes that "various incentives should be provided in appropriate cases to encourage housing in the downtown area."

The element notes that "moderate to high densities presently exist in established residential areas adjacent to downtown and should be maintained." All of the Downtown

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Study Area is designated as "high density" on the Generalized Residential Land Use Plan included in the element, with an average of 283 units per acre and 475 to 760 persons per acre.

Concerning the existing housing stock, the Residence element would "restrict the conversion of housing in commercial and industrial areas." It suggests that: "In those commercial areas which are subject to economic pressures likely to lead to conversion of the existing housing units, a form of mixed residential/commercial zoning should be employed whereby conversions of upper floor housing units to non-residential use would be subject to conditional use review."

The element would also: "Preserve the existing stock of residential hotels." It notes that "most of these hotels are close to downtown and are subject to strong economic pressures leading to their conversion or demolition," and states that "the loss of these units as housing for permanent residents should be discouraged."/11/

Concerning availability and affordability of housing, the Residence element would: "Ensure that office developments . . . assist in meeting the housing demand they generate." It states that "new or expanding commercial activities in the city increase the city's employment base. These new jobs are important to the residents of the city and of the Bay Area, and contribute to the continued economic vitality of the region. The workers filling these jobs need housing . . . Office developments . . . should assist in meeting the City's housing needs by contributing in some manner to the provision of additional housing."/12/

Finally, the Residence element recognizes that housing is a regional concern and lays out an objective: "To address housing needs through a coordinated regional approach." As a policy it would "encourage the balancing of regional employment growth with the development and growth of housing in the region."

The Residence element would implement its stated objectives in a number of ways, to the extent that City controls and actions could influence the provision of housing. One way is the rezoning of underused commercial areas for mixed use or predominantly residential use. Two areas within the Downtown Study Area are cited: the South-of-Market district west of Yerba Buena Center, and the North-of-Market (Tenderloin) district./13/

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The element, as a policy, would "promote the inclusion of housing in downtown commercial development." This would be achieved, on a permanent basis, by the granting of floor-area-ratio (FAR) bonuses at the rate of 5:1 in the C-3-O district, 4:1 in the C-3-R and C-3-G districts, and 2:1 in the C-3-S district./14/ The Residence element would: "Encourage higher residential density in areas adjacent to downtown . . . where higher densities will not have [a] harmful effect." The element suggests that, in appropriate cases, housing density be set not in terms of the number of housing units but by the allowable development envelope as determined by the height, bulk, and lot coverage requirements. This would foster the development of a greater number of smaller (studio and one-bedroom) units to meet demand.

The Urban Design Plan

This element of the Master Plan was adopted in 1971./15/ The Plan notes in its description of its purpose that "San Francisco's environment is magnificent, but the unique relationships of natural setting and man's past creations are extremely fragile." The Urban Design Plan is concerned both with development and with preservation. It claims to be a definition of quality, based on human needs.

The Urban Design Plan contains enunciated guidelines and has resulted in the development of more expanded or refined guidelines which are used by the Department of City Planning in the urban design review of major projects. The Plan states that: "The people of San Francisco have taken a leadership role among the citizens of the country in balancing conservation and change through new safeguards for cherished attributes of their city's character. This Plan is intended to reflect the people's needs and to consolidate future efforts to protect and improve the physical makeup of the city. As new needs and concerns arise in later years, this Plan will be added to and revised in the continuing process of comprehensive planning."

Among its Policies for City Pattern, Policy 3 would: "Recognize that buildings, when seen together, produce a total effect that characterizes that city and its districts." The Plan states that the relationships of building forms to one another and to other elements of the city pattern should be moderated so that the effects will be complementary and harmonious. It cautions that "individual buildings should stand out prominently in the city

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pattern only in exceptional circumstances, where they signify the presence of important community facilities and occupy visual focal points that benefit from buildings and structures of such design."

The Plan sets forth principles for major new development, some of which are pertinent to the Downtown Study Area. Among these are the principle that: "The relationship of a building's size and shape to its visibility in the cityscape, to important natural features and to existing development determines whether it will have a pleasing or a disruptive effect on the image and character of the city." It points out that "massive buildings on or near hills can overwhelm the natural land forms, block views, and generally disrupt the character of the city." It notes that "low buildings along the waterfront contribute to the gradual tapering of height from hilltops to water that is characteristic of San Francisco."

It points out that "tall buildings on slopes of hills severely restrict views from above." Concerning shadows, it points out that "plazas or parks located in the shadows cast by large buildings are unpleasant for the user," and states that "the height and mass of tall, closely packed buildings can be shaped to permit sunlight to reach open spaces."

Many of the Policies for Major New Development are pertinent to the Downtown Study Area. Policy 1 would: "Promote harmony in the visual relationships and transitions between new and older buildings," and states that "new buildings should be made sympathetic to the scale, form, and proportion of older development." Policy 2 would: "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance." Policy 3 would: "Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations." Policy 4 would: "Promote building forms that will respect and improve the integrity of open spaces and other public areas." The narrative notes that new buildings should not block significant views of public open spaces, including the Bay, and that buildings to the south, east, and west of parks and plazas should be limited in height or effectively oriented so as not to prevent the penetration of sunlight to such parks and plazas.

Policy 5 would: "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." The Plan expresses ranges of

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height to be used as an urban design evaluation for establishment of specific height limits. Similarly the Plan contains a map showing guidelines for the bulk of buildings, and Policy 6 would: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."/16/

The Urban Design Plan expresses the need to recognize the special urban design problems of development of large properties. Policy 9 would: "Encourage a continuing awareness of the long-term effects of growth upon the physical form of the city." The narrative states that "the citizens of San Francisco have an uncommon awareness that their environment is finite, and that the advantages of greater size and intensity may have ultimate limits."

The Plan for Recreation and Open Space

The Recreation and Open Space element was adopted in 1973./17/ Its objectives and policies pertain to the Bay Region, the San Francisco Shoreline, the Citywide System, and Neighborhoods. In the latter category, it contains one policy pertinent to the Downtown Study Area. This policy would: "give high priority for recreation improvements to high need neighborhoods." Both the North-of-Market and the South-of-Market (Study Areas 3 and 5) are identified as high need neighborhoods. Plans for public improvements in those areas have been prepared and programmed for implementation.

Requirements for the provision of open space by the private sector in the Downtown Study Area are indicated in Section V in the analysis of the impacts of each Alternative.

Environmental Protection Element

This element of the Master Plan consists of three parts. The first is the Plan for Conservation which was adopted in 1973./18/ This Plan is not directly pertinent to the Downtown Study Area. The second is the Plan for Transportation Noise Control which was adopted in 1974./19/ This Plan includes all of the Downtown Study Area in that part of the City which has the highest background noise levels, as measured in 1974. In most of the Study Area, new uses would require a detailed analysis of noise reduction requirements and inclusion of noise reduction features in the project design.

Energy

The Energy Policy component of the Environmental Protection Element was adopted in June 1982./20/ Objective 3, pertaining to commercial uses, would: "Promote effective energy management practices to maintain the economic vitality of commerce and industry." The narrative states: "The commercial sector is the fastest growing energy use sector in San Francisco. Commercial buildings consume over half of the electricity and over a quarter of the natural gas supplied to the city. Within this sector, electrical demand has been growing at rates double the growth of total city demand. The current boom in new office construction will further increase commercial energy use. Energy conservation in commercial buildings, therefore, represents an important citywide objective."

Policy 1 of Objective 3 would: "Promote effective energy management practices to maintain the economic vitality of commerce and industry." The narrative states that the greatest energy savings can be made through better management of lighting and better design and management of heating, ventilation and air conditioning (HVAC) systems."

Policy 2 is to: "Insure adequate local enforcement of California's non-residential building standards," and points out that responsibility for enforcement of the standards is vested in the City's Bureau of Building Inspection. Policy 3 would: "Expand the environmental review process to encourage the use of additional measures to save energy in new commercial buildings." Policy 4 would: "Promote commercial office building design appropriate for local climate conditions." Policy 5 would: "Encourage use of integrated energy systems."

Community Safety Element

This element was adopted in 1974 /20/ and is concerned with life safety, preservation, emergency operations, and reconstruction in relation to earthquakes. It notes that the Downtown Study Area has an estimated intensity of future ground shaking ranging from strong through very strong to violent and it identifies areas of potentially hazardous building concentrations and damage levels based on an evaluation of structures. It notes that the portion of the Study Area generally east of Third and Kearny Streets is a potential liquefaction hazard area and a subsidence area. Portions of the South-of-Market district are also in this category. Both are classified as special geologic study areas.

The Northeastern Waterfront Plan

The Northeastern Waterfront Plan was adopted in 1977 /22/ as a guide to the development of that portion of the San Francisco Waterfront situated between Fisherman's Wharf and China Basin. Although pertaining primarily to the public area along the waterfront, it contains an objective "To develop limited additional office and commercial space in order to serve the City's economic needs and to encourage a mixture of uses and activities along the northeastern waterfront."

Policy 1 would: "Permit additional office space development adjacent to the Downtown Office District which compliments the downtown but which is of a lesser intensity and which reflects the transition between the City and the water." It would limit general and specialty retail uses, in combination with other uses, to those which would not significantly detract from the Downtown Retail District. It would encourage limited additional Bay-oriented commercial recreation and public assembly uses inland of the seawall.

The plan contains proposed height and bulk districts which differ slightly from those now in effect, changing open space areas to an OS classification, reducing the Ferry Building and the block bounded by Howard, Stewart and Folsom Streets and The Embarcadero from an 84-ft. to a 40-ft. height district.

Conclusion

Those aspects of the San Francisco Master Plan that pertain to or affect that Downtown Study Area are described above. As comprehensive planning is a continuing process, the Master Plan and its various elements serve as a basis for specific public design plans, for implementation of the plan, and for the public review of privately sponsored project plans, for regulatory proposals for modifications to meet changing needs or perceptions of need. Representative of this latter type of change are the recommendations for Guiding Downtown Development prepared by the Department of City Planning in July 1982 which are considered in this report as Alternative 5. Also, a Downtown Plan is in preparation by the Department of City Planning. This plan will bring together all aspects of the Master Plan as they pertain to the downtown area and elaborate on detailed issues specific to the downtown area. Like other special area plans — the Northeastern Waterfront Plan, for

example - it will focus on the downtown area as a special physical entity, with special problems and unique opportunities.

REGIONAL PLANS

In addition to the San Francisco Master Plan, which is mandated by the Charter of the City and County of San Francisco, there are a variety of plans prepared by regional agencies which, though broader in scale, are pertinent to Downtown San Francisco. Most important of the plans in this category is the Regional Plan 1980 prepared by the Association of Bay Area Governments (ABAG).^{23/} ABAG was founded in 1961 as a regional planning agency by the nine counties and most of the cities in the San Francisco Bay Area. The first regional plan was published in 1970 as the major comprehensive statement on future development in the Bay Area. Amendments over the years led to a restructuring of the Plan and republication in 1980. The Regional Plan projects the economic base of the region, and contains plans for its physical resources, transportation, the natural environment — including air quality, water quality, and waste management — and subarea plans. The Regional plan incorporates plans prepared by special-purpose agencies such as the Regional Transportation Plan prepared by the Metropolitan Transportation Commission, (MTC) and the Air Quality Plan prepared jointly by the Bay Area Air Quality Management District, MTC, and ABAG.

The Regional Plan is a city-centered plan which emphasizes the use of public transit to link the regional centers and subcenters. Concerning San Francisco, the plan notes that it has "housing, public facilities, and social service needs which by far exceed those of neighboring jurisdictions. Its ability to meet these need may be diminished by the suburbanization of economic growth. Accordingly, San Francisco supports the diversification of its economic base by encouraging development in sectors where it holds a competitive advantage (finance, commerce, services, tourism)." Concerning housing and transportation, the plan notes that: "As San Francisco continues to grow as a white collar employment center, and lacking commensurate growth of housing opportunities at a price/rent level to accommodate new workers, the regional trend towards long-distance commuting will continue. . . . The adverse impacts of this trend include substantially more congestion on all highways leading into the city, exacerbation of air quality problems, increased demand for scarce energy resources, and further strain on transit systems, some of which currently operate at capacity during peak hours."

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It is also noted that "ABAG projections show only a 7% increase in occupied dwelling units in San Francisco to 1990 and a projected decline in population. When this is compared with a projected 21% increase in total employment, it seems evident that housing opportunities will not expand at a rate that will improve the housing/jobs balance."

In addition to ABAG and the special purpose agency plans mentioned above, the San Francisco Bay Conservation and Development Commission is responsible for the San Francisco Bay Plan as amended, which pertains to the area under its jurisdiction — the Bay and its shoreline./24/ The portion of the shoreline adjacent to the Downtown Study Area was included in a multi-agency special study of the San Francisco waterfront. The plan which evolved from that study is contained in the Northeastern Waterfront Plan of the San Francisco Master Plan.

NOTES - Local and Regional Plans and Required Approvals

/1/ Section 3.524 (originally Section 116), Charter of the City and County of San Francisco.

/2/ Section 65302, Division 1, Title 7, California Government Code, referred to as the Planning and Zoning Law.

/3/ Copies of referenced Master Plan elements are available for public review at the Department of City Planning, 450 McAllister Street, and at the Documents Division of the Main Library, Larkin Street, Civic Center.

/4/ Section 65840, Division 1, Title 7, California Government Code.

/5/ City Planning Commission Resolution No. 8001, June 29, 1978.

/6/ City Planning Commission Resolutions No. 6834, April 27, 1972; No. 7647, January 20, 1977; and No. 9434, June 24, 1982.

/7/ This proposal is now under study in the I-280 Transfer Concept Program under the direction of Caltrans.

/8/ City Planning Commission Resolution No. 6706, April 8, 1971.

/9/ City Planning Commission Resolution, No. 7417, December 11, 1975.

/10/ George Williams, Assistant Director of Planning, telephone communication, January 26, 1983.

/11/ Chapter 41 of the Administrative Code pertains to this policy. Some of its provisions are in litigation.

/12/ The interim measure in use by the City Planning Commission requires downtown office developers to provide housing, expressed in terms of unit credits per bedroom; or

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credits for a low- or moderate-income unit also assisted with governmental rental or operating subsidies; or credits for a moderate- or low-income unit without governmental rental or operating subsidies. Developers may also contribute to the shared appreciation pool under the Mortgage Revenue Bond Program established by the Mayor's Office of Housing and Community Development.

/13/ The Department of City Planning is conducting a rezoning study of the North-to-Market district in 1982-83.

/14/ See Table III.1, p. III.5, for definitions of the C-3 use districts.

/15/ City Planning Commission Resolution No. 6745, August 26, 1971.

/16/ Specific height and bulk districts have been adopted as part of the City Planning Code, thus attaining the force of law. Amendments to these limits are proposed in several of the Alternatives under consideration in this report.

/17/ City Planning Commission Resolution No. 7021, May 24, 1973.

/18/ City Planning Commission Resolution No. 7020, May 24, 1973.

/19/ City Planning Commission Resolution No. 7244, September 19, 1974.

/20/ City Planning Commission Resolution No. 9409, June 3, 1982.

/21/ City Planning Commission Resolution No. 7241, September 12, 1974.

/22/ City Planning Commission Resolution No. 7643, January 19, 1980.

/23/ Regional Plan 1980, San Francisco Bay Area, ABAG, 1980.

/24/ San Francisco Bay Plan, San Francisco Bay Conservation and Development Commission, January 1969, July 1979 as amended.

B. LAND USE AND REAL ESTATE DEVELOPMENT

C-3 DISTRICT BACKGROUND

Introduction

The C-3 District is the most intensively developed area in San Francisco. Though the district includes only about two percent of the land area in the City, most of the high-rise buildings in the City are located here. Office uses occupy the majority of the space in the C-3 District; retail establishments, hotels, housing and other uses are also present, but none of these uses occupy more than ten percent of the space.

Among the seven subareas of the C-3 District, nearly half of the space is in the Central Office area, Subarea 1./1/ This reflects the relatively large geographic area included within the subarea boundaries as well as the high density of development there. The Tenderloin and Union Square areas, Subareas 5 and 6, have the next largest shares of C-3 District space, about 18 and 12 percent, respectively. The remaining four subareas have smaller shares of space, ranging from four to about eight percent. These include Chinatown, Subarea 7, the South Van Ness area, Subarea 4, and the two subareas south of Market Street, Subareas 2 and 3.

Table IV.B.1 shows C-3 District space by use and subarea at the end of 1981. The information comes from the Downtown EIR Land Use Inventory. (See Appendix C.) An analysis of the land uses shown in the table follows.

Office Space

Amount of Office Space

The space identified in the inventory includes 55 million sq. ft. of office space./2/ This figure does not include retail and other non-office uses also located in office buildings. These non-office uses occupy about 10

TABLE IV.B.1: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1981(a) (Thousands Of Gross Sq. Ft.)

Use	1	2	3	Subarea		5	6	7	Total	
				4					C-3	Percent of Total
Office(b) % of C-3 Total	37,162 67.2	3,948 7.1	904 1.6	4,626 8.4		2,714 4.9	4,594 8.3	1,380 2.5	55,328 100.0%	57.5%
Retail % of C-3 Total	1,706 22.0	207 2.6	430 5.5	415 5.3		1,013 13.0	3,372 43.7	613 7.9	7,756 100.0%	8.0%
Transient Hotel % of C-3 Total	1,921 20.8	-- --	249 2.7	31 0.3		5,024 54.5	1,936 31.0	61 0.7	9,222 100.0%	9.5%
Residential Hotel % of C-3 Total	160 5.6	-- --	162 5.6	74 2.6		2,205 72.4	194 6.8	5.3 1.9	2,848 100.0%	3.0%
Housing % of C-3 Total	64 1.6	12 .3	831 20.4	276 6.7		2,167 53.1	-- --	730 17.9	4,080 100.0%	4.2%
Cultural/Institutional/ Educational/Other % of C-3 Total	1,097 17.3	163 2.6	871 13.8	183 2.9		2,179 34.5	936 14.8	889 14.1	6,318 100.0%	6.6%
Industrial/ Warehouse/ Automotive % of C-3 Total	153 3.4	637 14.3	2,324 52.0	105 2.4		1,167 26.1	32 0.7	47 1.1	4,465 100%	4.6%
Parking % of C-3 Total	1,053 16.6	1,108 17.4	1,643 25.9	299 4.7		1,250 19.7	890 14.0	108 1.7	6,351 100%	6.6%
TOTAL Percent of Total	43,316 45.0%	6,075 6.3%	7,414 7.7%	6,009 6.2%		17,719 18.4%	11,954 12.4%	3,881 4.0%	96,368 100.0%	100.0%

(a) Based on Downtown EIR Land Use Inventory (See Appendix C.)

(b) Non-office uses, such as retail and parking, located in office buildings are not included in estimates of office space, but are included in their respective space use categories. They occupy approximately 10 percent of the space in office buildings.

SOURCE: Recht Hausrath & Associates

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percent of the space in office buildings./3/ The total space in office buildings in the C-3 District was thus about 61 million square feet in 1981.

This report includes information about both space occupied by office uses (hereinafter called office space) and total space in office buildings (hereinafter called space in office buildings). Both definitions refer to useful information. Information about office space is necessary because it is this measure that relates office space to type of business and to office employment./4/ Information about space in office buildings is appropriate because both (1) Planning Code regulations for new buildings and (2) statistics on past development and information on proposed future projects, are expressed in terms of this definition.

Office Building Construction

A large share of the office buildings in San Francisco has been built since 1960. Table IV.B.2 shows both annual and total figures for the construction of space in office buildings in the City. The table shows that the five-year annual average construction remained relatively constant from 1965 through 1979, with higher construction in the 1980-81 period./5/ The annual average from 1965 through 1981 was 1.7 million sq. ft. The portion of this development in the C-3 District is unknown, though it is the large majority of the total.

Location of Office Space

Two-thirds of the office space in the C-3 District is located in the Central Office area, Subarea 1. (See Table IV.B.1.) This area also has the highest density of office space, density being defined here as the square feet of office space divided by the land area of the subarea. The density of office space indicates the intensity of office use independent of the size of the subarea. The South Van Ness area, Subarea 4, has the next highest density of office space, due largely to the presence of bank information processing offices. The Union Square

TABLE IV.B.2: OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO
1965 - 1981, (Thousands Of Gross Sq. Ft.)

<u>Period</u>	<u>Office Building Construction</u>	<u>Annual Average</u>
1965-69	8,380	1,680
1970-74	8,620	1,720
1975-79	8,160	1,630
1980-81	4,310	2,160
Cumulative Total 1965-81	29,460	1,730

NOTE: The amounts shown are total new construction of space in office buildings without an allowance for demolition. Historic data specifically for the C-3 District are unavailable.

SOURCE: Department of City Planning.

area, Subarea 6, has the third highest density of office space. The latter two subareas each have about eight percent of the office space in the C-3 District. The other subareas all have lesser amounts and lesser densities of office space.

The majority of new office space is being built in Subarea 1. Through the late 1970's the triangle bounded by Montgomery, California and Market Streets comprised the premium office location in the City. Almost all company headquarters and the business and professional services

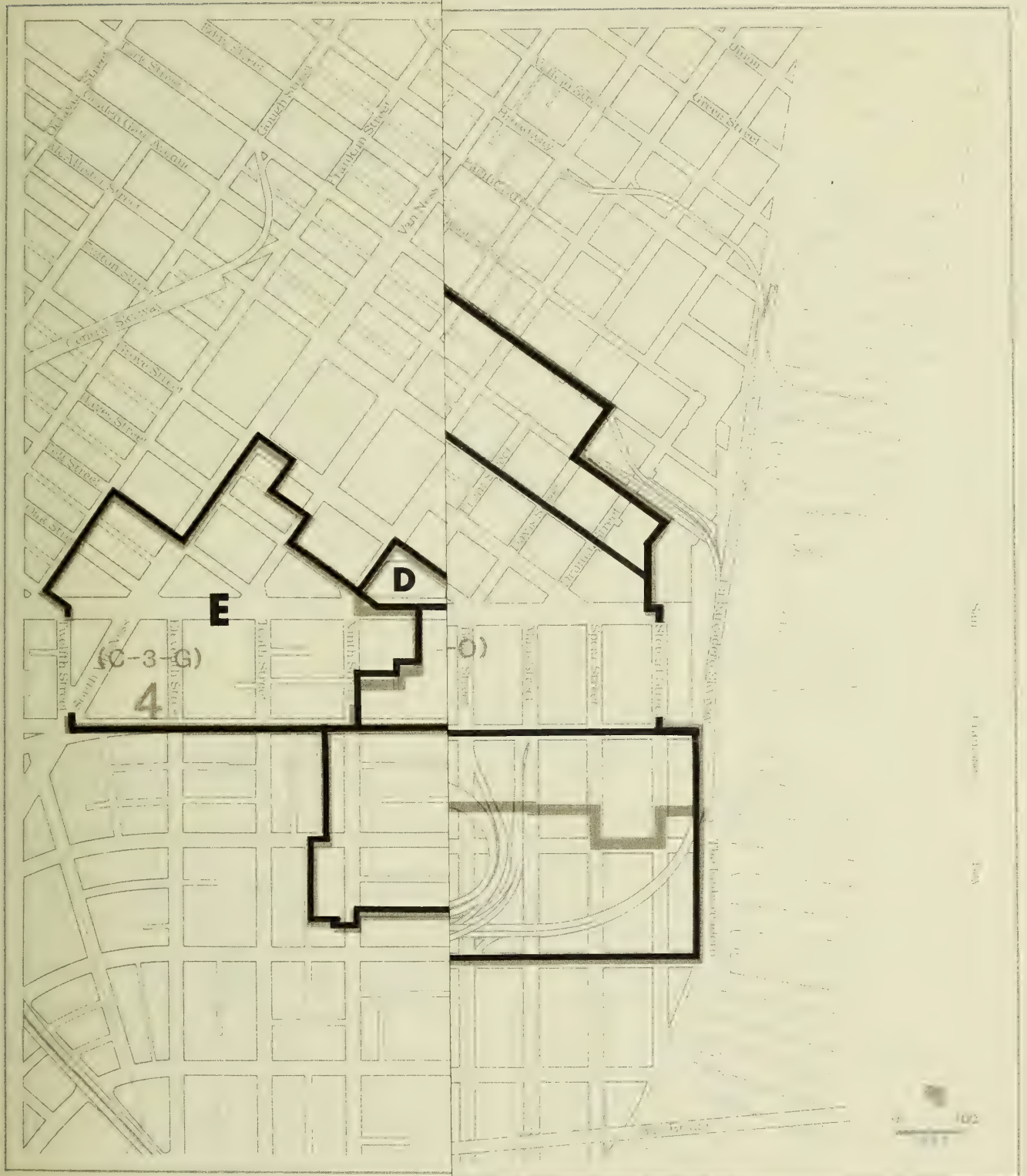
they used were located in this area. The large operations for which cost control was a priority, utilities, bank information processing, and government offices, were the principal office users outside of this area. As the availability of sites in the preferred location has decreased, office development adjacent to this triangle on all three sides has grown rapidly.

Investors anticipate that this expansion of the high-density office core will continue to the north (towards the Jackson Square area), to the west (towards the Union Square and Chinatown areas), further south of Market Street and west along Market Street. Other investors are seeking lower cost properties with long term potential in areas to the south of Market Street west of Yerba Buena Center.

Office Rents

Office space rents throughout the C-3 District indicate the value that office users place on different locations within the District. Table IV.B.3 lists typical 1982 office rents for various areas of the C-3 District./6/ The rent areas are shown in Figure IV.B.1. It should be recognized that each rent area includes buildings in a variety of conditions and situated in a variety of locations within the rent area. In Rent Area A, for example, some new space is available for \$30 per sq. ft. per year while top floor space in a premium building may cost \$50 per sq. ft. per year. Old buildings have a greater percentage rent range, as the condition and type of facilities available in the buildings vary more widely.

Area A typically has the highest office rents; it is sometimes referred to as the "premium rent area" in later discussions. This rent area covers most of Subarea 1, the financial district. Rent Areas B and C, which are adjacent to Rent Area A, have the next highest rents. Rent Area G also has relatively high rents, to a large extent due to its location along Market Street. Rent Area H, south of the financial district and extending west one block past Yerba Buena Center, has the next highest rents. Areas D and E, essentially the Tenderloin and South Van Ness

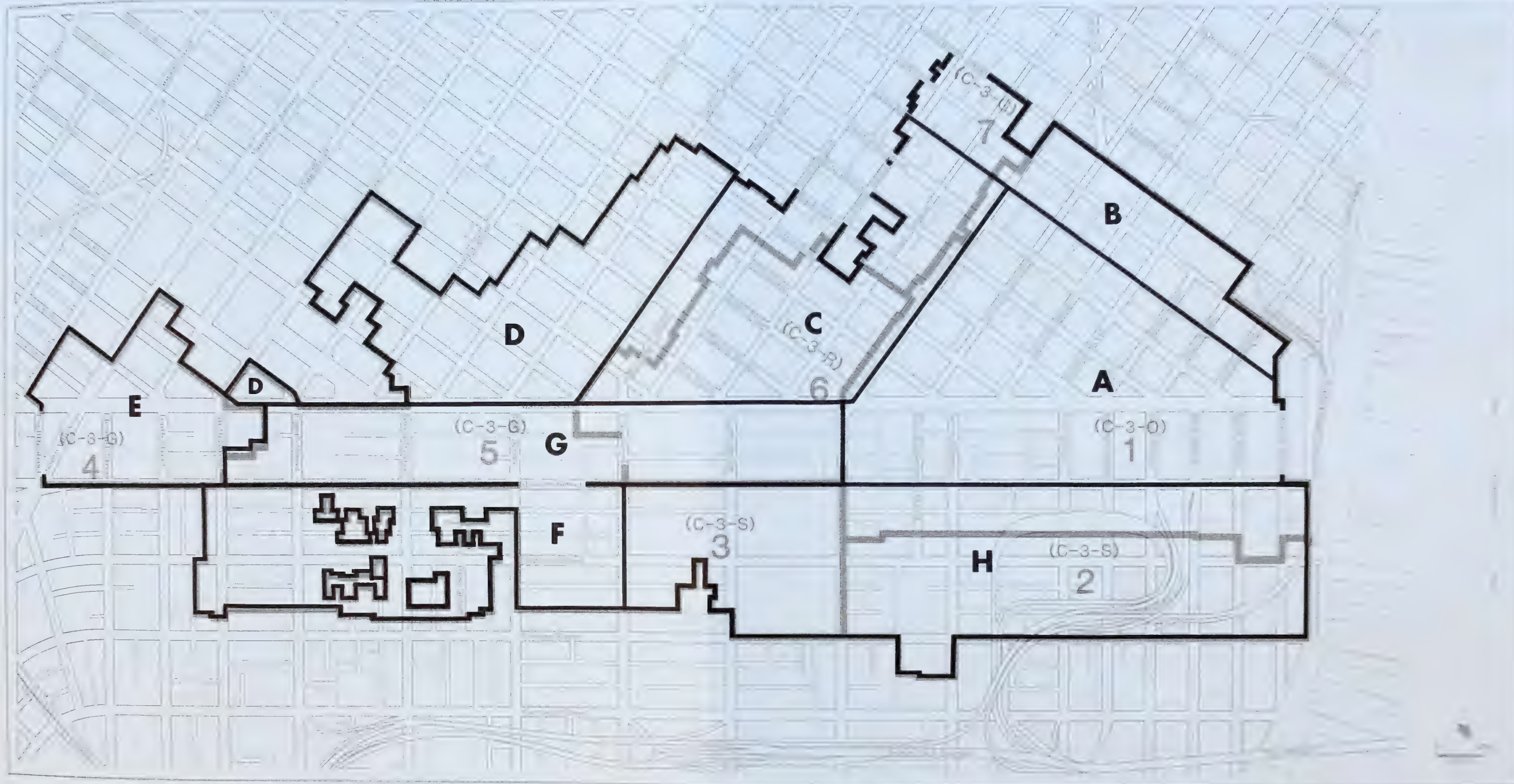


TYPICAL OFFICE RENTS (P
RENT AREA NEV

A
B
C
D
E
F
G
H

**FIGURE IV.B.1:
C-3 DISTRICT RENT AREAS**

SOURCE: Recht Hausrath & Associates



TYPICAL OFFICE RENTS (PER SQUARE FOOT, PER YEAR IN 1982 DOLLARS)

RENT AREA	NEW BUILDINGS (A)	OLD BUILDINGS (B)
A	\$ 35	\$ 22
B	32	20
C	28	18
D	24	13
E	24	13
F	20	10
G	28	15
H	26	15

NOTES: (A) INCLUDES BUILDINGS UNDER CONSTRUCTION AND COMPLETED SINCE ABOUT 1945.

(B) INCLUDES BUILDINGS COMPLETED BEFORE ABOUT 1945.

NOTE: Existing Use Districts are shown in brown.

FIGURE IV.B.1:
C-3 DISTRICT RENT AREAS

SOURCE: Rent Rates and Asses...

TABLE IV.B.3: C-3 DISTRICT TYPICAL OFFICE RENTS (Per sq. ft. per year in 1982 Dollars)

<u>Rent Area</u>	<u>New Buildings (a)</u>	<u>Old Buildings (b)</u>
A	\$35	\$22
B	32	20
C	28	18
D	24	13
E	24	13
F	20	10
G	28	15
H	26	15

(a) Includes buildings under construction and buildings recently completed.

(b) Generally includes buildings completed before about 1945.

SOURCE: Recht Hausrath & Associates

subareas, have lower rents. Rent Area F, furthest from the financial district and without easy accessibility to the Market Street transportation corridor, has the lowest rents.

Office Space in the City and Region

As there is no citywide land use inventory, an accurate count of office space in San Francisco is not available.⁷⁷ The large majority of the space is in the C-3 District. Other office space in the City includes that in the north waterfront areas, Executive Park (being built between Candlestick Park and Highway 101), both new and converted office space south of the C-3 District, and office buildings scattered throughout the City.

IV. Environmental Setting

Space in office buildings in the other eight counties of the nine-county Bay Area is estimated to be 35 million sq. ft. as of the end of 1979,^{/8/} and had probably exceeded 40 million sq. ft. by 1981.

While San Francisco has the majority of existing office space in the region, the rapid growth of office functions in other Bay Area counties has resulted in less than half of the new space in office buildings in the region being built in San Francisco. Forty-five percent of the dollar value of building permits issued for office construction in the region in the years 1972 through 1979 was for San Francisco development.^{/9/} Because the average cost per square foot for office construction is higher in San Francisco, however, the City's recent share of office space construction is less than 45 percent. Santa Clara County has the second largest share of the office building permit value in the region with 18 percent of the nine-county total.

Retail Space

The Downtown EIR Land Use Inventory identifies almost eight million sq. ft. of retail space in the C-3 District. This amount includes free-standing retail space (for example, department stores around Union Square and small storefront shops) and shops and restaurants in both old and new office buildings (ranging from large complexes such as the Embarcadero Center to smaller ground floor establishments).

Retail space is concentrated in Subarea 6, the Union Square area, which contains over 40 percent of total retail space in the C-3 District. Although retail space in Subarea 1 is a relatively small share (four percent) of total space in the subarea, this amount is 22 percent of the total retail space in the C-3 District. Much of the Subarea 1 retail space is in office buildings. Relative to its small size, Subarea 7, Chinatown, contains a large proportion of retail space. Sixteen percent of the total space in the Chinatown Subarea is identified as retail space, a share second only to that found in Subarea 6. Retail space is a relatively small share of the total space in all other subareas.

IV. Environmental Setting

The C-3 District includes the principal retail development in the City. The area not only serves City residents, downtown workers and tourists, but is also a major retailing center for the region. About one-third of total citywide retail sales occurs in the downtown retail district. The majority of these sales are for shoppers goods such as apparel, household goods, and specialty items. The importance of retailing downtown is highlighted by the fact that over one-half of citywide shoppers goods sales occur in the downtown area./10/

Retail facilities in the City outside the C-3 District are widely distributed. The Stonestown Shopping Center is the largest facility coordinated under one management. Compared to the downtown area, sales at Stonestown represent a smaller share of total sales in the City (five to ten percent of citywide shoppers goods sales)./11/ The rest of City retailing is distributed among the neighborhood shopping districts, along major thoroughfares, and in tourist areas such as Fisherman's Wharf.

Retail facilities in the C-3 District compete for sales with other facilities in the City and with other regional centers throughout the region. Among the larger retail centers offering competition are the Serramonte Center located in Daly City just outside of San Francisco, the Hillsdale and Fashion Island Shopping Centers in San Mateo, the Stanford Shopping Center, and downtown Walnut Creek.

Hotel Space

The Downtown EIR Land Use Inventory identifies about 12 million sq. ft. of hotel space in the C-3 District. About one-quarter of this space is in residential hotels, the majority of which are in Subarea 5. The remainder is in transient hotels, representing about 16,400 hotel rooms./12/ Transient hotels account for about 10 percent of the total space in the C-3 District (see Table IV.B.1).

IV. Environmental Setting

A majority of the transient hotel space in the C-3 District is located between Union Square and the heart of the Tenderloin, in Subareas 5 and 6. Subarea 5, the Tenderloin, contains over half of the total transient hotel space in the C-3 District; hotels, both transient and residential, account for 41 percent of the total space in this subarea. Most of the balance of the transient hotel space in the C-3 District is in Subareas 1 and 6, which contain about equal amounts of transient hotel space.

The hotel rooms outside of the C-3 District represent about 30 percent of the transient hotel rooms in the City. The Nob Hill area has several first class hotels that are competitive with the first class hotels in the C-3 District. A large proportion of the hotel rooms in the rest of the City are less expensive motor hotel rooms. These accommodations, such as those located on Van Ness Avenue, Lombard Street and Fisherman's Wharf are not as directly competitive with C-3 District hotels.

Outside the City, the primary alternatives to San Francisco hotels are in northern San Mateo County. The number of hotel rooms in this area is growing very rapidly. Their primary advantage is their proximity to San Francisco International Airport.

Residential Use

The 1980 Census provides detailed information on housing that supplements the general data gathered in the Downtown EIR Land Use Inventory./13/ Table IV.B.4 shows the characteristics of the housing stock, including residential hotel units, in the "downtown census tracts", a group of tracts approximately constituting the C-3 District./14/

In 1980, there were about 21,900 housing units in these tracts, about seven percent of the total housing stock in the City. Ninety-eight percent of the occupied units in the area were renter-occupied./15/ It is estimated that about half these units could be in residential hotels./16/

IV. Environmental Setting

According to the Census, about 12 percent of the housing units in the downtown census tracts were vacant in 1980; about 15 percent of all the vacant units in the City. This vacancy could indicate a supply of uninhabitable units and units being held off the market in anticipation of changes in use or demolition, as well as units that were vacant and available for occupancy./17/

TABLE IV.B.4: CHARACTERISTICS OF THE HOUSING STOCK IN
DOWNTOWN CENSUS TRACTS AND IN THE CITY, 1980

<u>Characteristics</u>	<u>City</u>	<u>Downtown Census Tracts (a)</u>	<u>Downtown Census Tracts As A Percent Of Total City</u>
Total Units (b)	316,351	21,885	6.9%
Vacant Units	17,395	2,603	15.0%
Vacancy Rate	5.5%	11.9%	
Owner-Occupied Units	100,786	341	0.3%
Renter-Occupied Units	198,170	18,941	9.6%

(a) Ten complete census tracts (114-115, 117, 118, 121, 123-125, 176, 178 as shown in the map at the end of Appendix G) are used as an approximation of the C-3 District.

(b) Total year-round housing units including condominiums and residential hotels.

SOURCE: U.S. Department of Commerce, City and County of San Francisco, 1980 Census Information File STF1-A, March 1982, Reports #1 and #4.

TABLE IV.B.5: CHANGES IN HOUSING STOCK IN DOWNTOWN CENSUS TRACTS (a), 1970-1980

	<u>1970</u>	<u>1980</u>	<u>Change 1970-1980</u>	<u>Percent Change</u>
Total Units (b)	28,262	21,885	(6,377)	(22.6%)
Vacant Units	3,758	2,603	(1,155)	(30.7%)
Owner-Occupied Units	299	341	42	14.0%
Renter-Occupied Units	24,205	18,941	(5,264)	(21.7%)

(a) Ten complete census tracts (114-115, 117, 118, 121, 123-125, 176, 178 as shown in the map at the end of Appendix G) were used as an approximation of the C-3 District.

(b) Total year-round housing units including condominiums and residential hotels.

SOURCE: U.S. Department of Commerce, 1970 Census of Population and Housing: Census Tracts, San Francisco - Oakland SMSA; and City and County of San Francisco, 1980 Census Information File STF1-A, March 1982, Reports #1 and #4.

Rents for units in the downtown census tracts are considerably lower than the average for the City. In the 1980 Census data, median monthly rents ranged from \$122 to \$222 with only one of 10 tracts showing median rents over \$190 per month. The median rent for the City as a whole was reported as \$267 per month./18/

Between 1970 and 1980, there was a net decrease of about 6,400 units in the downtown census tracts, a decline of about 23 percent from 1970. Table IV.B.5 shows the changes in housing stock reported by the Census. This decrease could indicate the loss of units to demolition and to conversion from residential hotel to transient hotel, apartment, or commercial uses./19/

Other Land Uses

The cultural/institutional/educational/other and industrial/warehouse-/automotive categories of space use are both aggregations of a number of uses with some similar characteristics. The activities in the cultural/institutional/educational/other category are often not able to compete for premium sites or new building space. Also, many of the activities in this group occupy relatively special use buildings (churches, schools, lodge or meeting halls, etc.). The large portion (over one-third) of this type of C-3 District space that is located in Subarea 5, the Tenderloin, reflects these factors. The activities in this type of space in Subarea 1 tend to be those in office-type space including educational facilities such as the colleges and business libraries. The Moscone Center in Subarea 3 is one significant new facility that falls in this category.

The industrial/warehouse/automotive category includes space with a low intensity of use. The employment density is low and the buildings are one and two stories and generally relatively old. During the last couple of decades the amount of space occupied by these activities has declined. This decline is partially due to the competition for their sites from other uses, especially office, which is usually expressed in the form of higher rents. The decline is also partially due to the choice by these activities to locate in less congested, more peripheral locations.

Parking use includes parking lots as well as parking space in buildings. Parking in Subarea 1 is largely space in office buildings. Parking in Subarea 6 primarily serves downtown retail activities. About two-thirds of C-3 District parking is located in Subareas 2, 3, 4 and 5, outside the most intensely developed areas.

Overall Density of Development

A high density of development in an area generally indicates that rents have been strong enough to justify the construction of large buildings. The space use that contributes the greatest density is usually the use

TABLE IV.B.6: C-3 DISTRICT DENSITY OF EXISTING DEVELOPMENT BY SUBAREA, 1981

	Land Area (Thousands of Gross Sq. Ft.) (a)	Total Floor Space (Thousands of Gross Sq. Ft.) (b)	Density of Development (FAR) (c)
<u>Subarea</u>			
1	6,411	43,316	6.8
2	2,065	6,075	2.8
3	3,824	7,414	1.9
4	1,181	6,009	5.1
5	4,134	17,719	4.0
6	1,974	11,954	6.0
7	918	3,881	4.2
TOTAL	20,507	96,368	4.7

(a) From the Downtown EIR Land Use Inventory; not including public rights of way such as streets and sidewalks.

(b) From the Downtown EIR Land Use Inventory; including all space uses.

(c) FAR refers to floor area ratio, or total space in buildings (column 2) divided by total land area (column 1), for each subarea. See note 20.

SOURCE: Recht Hausrath & Associates

capable of outbidding other uses for sites. A low density indicates an opportunity for new development if market demand is or becomes strong.

Density of development is measured in this section by floor area ratio (FAR), which is defined as total building space divided by total land area, excluding public rights of way./20/ Table IV.B.6 shows the land area, the floor area (including all space uses), and the overall average FAR of existing development for each of the subareas of the C-3

District. Comparison of average FAR among subareas indicates those C-3 District areas where the real estate market has been strong enough to justify large buildings and those areas where future development opportunities are likely to be greatest when market demand becomes strong./21/ Review of Tables IV.B.1 and IV.B.6 provides insights into the uses which are responsible for higher densities in some areas, and those uses in lower density areas which could be affected by future development pressures.

As would be expected, Subarea 1 has the highest density of development, primarily due to highrise office buildings. Subarea 6 has the second highest density, attributable to a mix of retail, hotel, and office uses. Bank office buildings account for the majority of the relatively high density in Subarea 4, while hotels contribute most to the higher density in Subarea 5. Subarea 7 shows a mid-level density which, like Subarea 6, can be attributed to no one principal use. It should be noted that Subareas 5 and 6 have a higher density north of Market Street and a lower density south of Market Street. The lower densities in Subareas 2 and 3 and in portions of Subareas 5 and 6 indicate that there are or could be an increase in development opportunities in these areas. In some cases, new development could take place on vacant sites or on sites with few, low intensity uses. Uses in the industrial/warehouse/automotive group and parking could come under the most pressure for change in these areas. Cultural/institutional/educational/other uses and small scale retail and office activities could also come under pressure.

C-3 DISTRICT 1984

Construction To 1984

Table IV.B.7 shows new space under construction in the C-3 District as of mid-1982 by type of building./22/ Office buildings represent by far the largest share of this new development, with about 7.4 million sq. ft. under construction.

The average period of construction for C-3 District office buildings is approximately three years, with occupancy occurring gradually as the floors are completed with their tenant improvements. All of the buildings under construction in 1982 will probably have space available for occupancy in 1984. Therefore, these buildings include the new space to be constructed in the C-3 District in 1982, 1983, and 1984.

Attributing this growth to the years 1982-84 implies an average construction of office building space of 2.5 million sq. ft. per year for the C-3 District. This rate of construction exceeds the average for the whole City since 1965 (1.7 million sq. ft. per year from Table IV. B.2).

TABLE IV.B.7: AMOUNT OF SPACE UNDER CONSTRUCTION IN C-3 DISTRICT BY TYPE OF BUILDING, 1982 (a)

<u>Building Type</u>	<u>New Construction (Thousands of Gross Sq. Ft.)</u>	<u>Percent of Total New Construction</u>
Office (b)	7,418	91%
Retail (c)	175	2%
Transient Hotel	500	6%
Housing (d)	98	1%
TOTAL	8,191	100%

(a) The amount shown is total new construction without allowance for demolition (comparable to figures in Table IV.B.2).

(b) Space in office buildings under construction includes space for office, retail, and cultural/institutional uses.

(c) Space in free-standing retail buildings under construction does not include the retail use in new office buildings.

(d) The new housing is incorporated in office building projects, but is listed separately so that the office building figures are comparable with statistics on historical and new construction.

SOURCE: Department of City Planning

Business Cycles and Office Vacancies

The relatively large amount of space under construction should be viewed in the context of the office market of the last few years. From 1975 through at least 1980 the strong economy generated an increase in the demand for office space that exceeded the supply of new office space. The vacancy rate was low and rents increased during this period. Strong demand and high rents subsequently resulted in the large amount of office space which was built in 1981 and which is being completed in the 1982-84 period. At the same time that new development has increased, however, the economy has entered a recessionary period. Vacancy rates are increasing, and office space is difficult to rent without lowering the rents or offering other concessions to tenants.

The perspective of this study covers roughly two decades, the years 1981 to 2000. During this period there will probably be several cycles in the economy, and fast and slow periods in office construction. Little is gained from attention to short-term cycles in a study with a long-term perspective. Therefore, the forecasts of the demand for office space to accommodate employment growth are made for the periods 1981 - 1990 and 1990 - 2000./23/ The annual compound rate of employment growth forecast for the period 1981-1990 is used to calculate the demand for space in 1984. No attempt is made to forecast the extent or duration of the current recessionary period.

It can nevertheless be noted that even with the assumption of trended employment growth in the 1981-84 period, the amount of office construction exceeds the projected demand. The net increase in office space is 6.7 million sq. ft. during this period./24/ The office employment forecast results in a demand for 4.5 million additional sq. ft. of office space by 1984./25/ This differential would increase the office space vacancy rate by about four percent./26/ As noted above, the current recession could contribute to an even higher 1984 vacancy rate.

Space Use

Table IV.B.8 shows the projected gross areas for each space use in each subarea for 1984. This table presents information that is comparable to the figures shown in Table IV.B.1, though accounting for changes in space use from 1981 to 1984. The 1984 setting consists of space existing at the end of 1981, plus space constructed in 1982, 1983, and 1984, less space removed preparatory to this construction. The table also reflects the projected conversion of some space to office use during this period./27/

The net increase in total space in the C-3 District by 1984 will be 7.2 million sq. ft., an increase of 7.5 percent above the amount existing at the end of 1981./28/ Office space dominates this addition of space. By 1984, office uses will represent 60 percent of space in the C-3 District, up from 57.5 percent in 1981. The growth of office space 1981-1984 represents a 12 percent increase./29/ Retail space, transient hotels, and housing also will show some growth. Space in residential hotels will not change and there will be a decline in space in the remaining three categories: cultural/institutional/educational/other, industrial/-warehouse/automotive and parking.

The greatest change in space by subarea will occur in Subarea 1, where the amount of space will increase by 12 percent from 1981 to 1984. Almost all of this growth will be office space. Changes in the other subareas will be relatively small. There will be some increase in office space in Subareas 2, 3, and 5 and growth of retail space in Subarea 6. There is no new construction underway in either Subarea 4 or Subarea 7.

TABLE IV.B.8: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1984(a) (Thousands Of Gross Sq. Ft.)

Use	1	2	3	Subarea 4	5	6	7	Total C-3	
								District	Percent of Total
Office(b) % of C-3 Total	42,666 68.7	4,369 7.1	1,422 2.3	4,635 7.5	2,877 4.6	4,710 7.5	1,395 2.3	62,074 100.0%	60.0%
Retail % of C-3 Total	2,096 25.5	207 2.5	430 5.2	415 5.1	1,021 12.4	3,438 41.8	613 7.5	8,220 100.0%	7.9%
Transient Hotel % of C-3 Total	1,921 19.8	-- --	249 2.6	31 0.3	5,024 51.7	2,436 25.1	61 0.6	9,722 100.0%	9.5%
Residential Hotel % of C-3 Total	160 5.6	-- --	162 5.6	74 2.6	2,205 77.4	194 6.8	53 1.9	2,848 100.0%	2.7%
Housing % of C-3 Total	162 3.9	12 .3	831 19.9	276 6.6	2,167 51.8	-- --	730 17.5	4,178 100.0%	4.0%
Cultural/Institutional Educational/Other % of C-3 Total	1,035 16.9	150 2.5	871 14.2	183 3.0	2,179 35.6	823 13.4	879 14.4	6,120 100.0%	5.9%
Industrial/Warehouse/ Automotive % of C-3 Total	136 3.3	568 13.8	2,141 51.9	96 2.3	1,116 27.0	29 0.7	42 1.0	4,128 100.0%	4.0%
Parking % of C-3 Total	1,046 16.7	1,079 17.2	1,643 26.3	299 4.8	1,227 19.6	856 13.7	108 1.7	6,258 100.0%	6.0%
TOTAL Percent of Total	49,222 47.5%	6,385 6.2%	7,749 7.5%	6,009 5.8%	17,816 17.2%	12,486 12.1%	3,881 3.7%	103,548 100.0%	

(a) Space constructed in 1982-84 has been added to the 1981 inventory, space on these sites in 1981 removed, and projected conversion of space included. Net changes in space 1981-84 are reflected by the differences between the figures in Table IV.B.1 and the figures shown here.

(b) Non-office uses, such as retail and parking, located in office buildings are not included in estimates of office space, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

NOTES - Land Use and Real Estate Development

- /1/ The seven subareas are shown on Figure II.C.1.
- /2/ Office space occupied by government activities, in both public and privately owned buildings, is included in this figure.
- /3/ A random sample of about 100 office buildings using the data in the Downtown EIR Land Use Inventory revealed 10 percent non-office use.
- /4/ As explained in Section IV.C, Business and Employment, employment densities are expressed in terms of space per employee working in a business activity of a particular type. Employees of business activities in office space (office uses) work at different employment densities than employees in businesses in retail space (retail uses) even though both activities could be located in an office building. Since employment densities are associated with business activities it is the use of space that is the link between space and employment not necessarily the type of building in which the space is located.
- /5/ Construction completed in 1980 was 1.3 million sq. ft.; the amount completed in 1981 was 3.0 million sq. ft.
- /6/ The rents shown in Table IV.B.3 were estimated by Recht Hausrath & Associates based on information from a survey of 16 realtors and other persons knowledgeable about the office real estate market undertaken as part of this study, and from interviews with other knowledgeable persons.

The rents shown in Table IV.B.3 and Figure IV.B.1 were chosen primarily for use in the real estate analysis of development feasibility as explained in detail in Appendix G. The usefulness of these figures in this setting section is to identify the differences in office rents within the C-3 District which arise in the real estate market primarily as a function of location. By typical rents, the figures are judged to be representative of each rent area. As explained in the text, there is a range of rents within each area dependent on the type of facilities, condition of the space, and location within the area. The differences in rents among rent areas would be obscured by showing these ranges. The significance of these relative rents is in understanding how the market values different locations within the C-3 District and in their usefulness in forecasting future development patterns. This becomes more clear in subsequent sections (see Section V.B, Land Use and Real Estate Development and Appendix G).

NOTES - Land Use and Real Estate Development (Continued)

- /7/ The City Planning Department's inventory of space in office buildings throughout the City shows a total of 57.2 million sq. ft. in the total City as of the end of 1981. This figure is lower than the amount identified in the Downtown EIR Land Use Inventory (61 million sq. ft. including non-office uses). The difference appears to be due to several factors. The Department's inventory is based on a pre-1960 data base. Some portion of the difference may be due to buildings not included in this data base. The lower estimate does not include buildings which have been converted to office use from other uses since 1960, the date of the base inventory. Also, certain building space (e.g. mechanical floors) is not included in the City's calculation of floor area for code purposes. (See Note 20.)

- /8/ Association of Bay Area Governments (ABAG), "Bay Area Office Growth", Berkeley, California, April, 1981 pp. 31-62. This number may be an underestimate of total space in office buildings, as the sources for the report apparently do not always include small office buildings.

- /9/ Ibid. p. 18.

- /10/ U.S. Department of Commerce in 1977 Census of Retail Trade: Major Retail Centers in Standard Metropolitan (CBD), Statistical Areas, California. Retail sales in the Central Business District (CBD) a geographic area including the financial district, Union Square, part of the Tenderloin, Civic Center and blocks between Market and Howard Streets, from 11th Street to the Embarcadero, were 30% of total City retail sales in 1977. Shoppers goods sales represented 60% of CBD sales (54% of total City shoppers goods sales). These proportions were similar in 1972. A map of the CBD area is shown in Figure H.6 at the end of Appendix H. It is fairly similar to the C-3 District and both areas include the major downtown retail facilities.

- /11/ Same source as note 10. In 1977, sales at Stonestown Shopping Center represented four percent of total City retail sales and six percent of citywide shoppers goods sales.

- /12/ Estimate based on San Francisco Convention & Visitors Bureau, San Francisco Lodging Guide, 1982.

- /13/ Housing is discussed here as a land use. It is also analyzed in the housing sections, though those sections are oriented to the relationship of jobs and housing.

NOTES - Land Use and Real Estate Development (Continued)

- /14/ The U.S. Census does not tabulate data specifically for the C-3 District. For this analysis, ten complete census tracts (114-115, 117, 118, 121, 123-125, 176, 178) were used as the best approximation of the geographic area covered by the C-3 District. If anything, these census tracts might include slightly more housing than is actually in the C-3 District. A map of these tracts is included at the end of Appendix G.

- /15/ U.S. Department of Commerce, City and County of San Francisco, 1980 Census Information File STF1-A, March 1982, Report #4.

- /16/ Department of City Planning, A Study of the Conversion and Demolition of Residential Hotel Units, page 11. This report estimates that in 1980 there were 10,308 residential hotel rooms in four City areas including Union Square, Financial District, North of Market, and Chinatown. There also were 4,772 additional rooms in these four areas in non-first class hotels with both residential and transient occupancy. Since estimates were not prepared for the C-3 District, these figures provide an indication of the residential hotel units in the C-3 District. These four areas probably include hotels outside the C-3 District's northern boundaries but they do not include hotels in C-3 District areas south of Market Street or near the Civic Center.

- /17/ Probably all three of these factors contributed to the reported census vacancy figures. The City Planning Department's study referenced in the previous note indicates that a number of residential hotel units in the downtown area were vacated, demolished, or converted to another use over the 1975 to 1980 period.

- /18/ Same source as note 15. Although rents have probably changed since the census figures, the relationship between rents in the downtown census tracts and the City has probably not changed appreciably.

- /19/ The City Planning Department's study referenced in Note 16 estimated that in the four areas used to approximate the C-3 District, 1,516 residential hotel units were converted to transient hotel use from 1975 to 1980 (see pages 13 and 17). Another 947 hotel units (most of which were probably in residential hotels) were vacated, demolished or converted to apartments in these areas. Although complete figures to explain the total decrease in downtown housing units are not available, these estimates provide an indication of the types of changes that occurred.

- /20/ This is not the same FAR that appears elsewhere in this report. The Construction Feasibility Analysis (Appendix D) uses FAR to describe the prototype buildings designed for this study. This FAR is the total code gross floor area divided by the site area for each prototype. The prototype FARs are referred to in the real estate development analysis discussed in section V.B, Land Use and

NOTES - Land Use and Real Estate Development (Continued)

Real Estate Development Impacts and Appendix G. As part of the real estate development analysis the prototype FARs were adjusted to reflect the ratio of total gross building area (as opposed to code gross building area) to site area. Analysis of a sample of existing buildings indicated that total gross building area averaged 12 percent more space than code gross building area. The gross square footage of space forecast to be developed under each Alternative reflects a 12 percent increase over the amount of space reflected in the prototype FARs. The floor area ratio obtained by dividing total gross square feet of development (code gross plus 12 percent) by land area would be comparable to the FAR as used in the Land Use Setting.

- /21/ The densities of existing development (Table IV.B.6) and the relative differences in rents among rent areas (Table IV.B.3) support the pattern of new development indicated by the location of projects under construction, approved, or under formal review. This is also the pattern summarized for office construction on page IV.B.5, and may be considered the real estate market setting.
- /22/ All buildings completed prior to mid-1982 are included in the Downtown EIR Land Use Inventory, the 1981 inventory of space. A listing of the projects under construction in mid-1982 and included in Table IV.B.7 is included in the Downtown EIR Land Use Inventory, a copy of which is available for public review at the Department of City Planning, 450 McAllister Street, Room 400.
- /23/ The employment forecasts are presented and described in Section V.C, Business and Employment Impacts. The 1984 office employment forecast is also presented in Section IV.C, Business and Employment Setting. The basis for these forecasts and for the way in which they are used to identify the demand for office space is described in Appendix H, Employment Analysis.
- /24/ To compare the demand for office space with increases in supply, the net increase in office space is the appropriate measure of supply (not the amount of space under construction in office buildings). The difference between the 7.4 million gross sq. ft. of space constructed in office buildings (Table IV.B.7) and the 6.7 million gross sq. ft. net increase in office space (Tables IV.B.1 and IV.B.8) is due to (1) some space in new office buildings not used as office space (495,000 sq. ft.) and (2) the demolition of some existing office space to make way for new construction (719,000 sq. ft.), both offset to some extent by (3) the conversion to office activities of some existing space previously used for other purposes (542,000 sq. ft.). These changes in space are detailed in the supplemental tables at the end of Appendix G.
- /25/ The demand for office space is estimated by multiplying the forecast increase in office employment by the employment densities (sq. ft. per employee) for business activities in office space. The employment forecasts and employment densities are presented in sections

NOTES - Land Use and Real Estate Development (Continued)

IV.C, and V.C and in Appendix H. The demand for office space is calculated by separately converting the employment forecasts for each of the business activities which occupy office space into forecasts of space demand, adding five percent for vacancy, and then summing these figures to provide the 4.5 million sq. ft. of additional office space demand by 1984.

- /26/ Considering all office projects under construction, the net increase in office space during the 1981-84 period (6.7 million sq. ft.) is larger than the additional demand for office space forecast for that period (4.5 million sq. ft.). The difference (2.2 million sq. ft.) is 3.54 percent of the total office space in the C-3 District in 1984 (2.2 million sq. ft. divided by 62.074 million sq. ft.). Thus the overall office vacancy rate could increase by about four percent. The vacancy rate could increase by a greater percentage in 1982 and 1983 if most projects were completed prior to 1984.
- /27/ Conversion and demolition are discussed in Section V.B and in Appendix G. See also note 24, above.
- /28/ The net changes in space (by use) 1981-1984 are estimated by the differences between the figures in Tables IV.B.8 and IV.B.1. The figures shown in Table IV.B.7 (space by type of building) cannot be added to those in Table IV.B.1 (space by use) without first accounting for the uses in the newly constructed space (e.g. office, retail, or other uses in space in office buildings), demolitions, and conversions. The net changes in space shown by the differences between Tables IV.B.8 and IV.B.1 account for all of these factors. The supplemental tables at the end of Appendix G detail the net changes to result from each of these factors.
- /29/ As explained in the previous subsection, not all of this increase in office space will be occupied in 1984 although it is projected to be built by then.

C. BUSINESS AND EMPLOYMENT

C-3 DISTRICT BACKGROUND

Business Activities

San Francisco's C-3 District includes a wide variety of business activities. Table IV.C.1 summarizes these activities by employment and business activity.

Primary office activities, such as corporate headquarters, financial institutions, major utilities, diverse business and professional services, and government are centered in the financial district and distributed throughout the C-3 District. These activities serve international, national, west coast, and local markets. They include executive, administrative, and information processing functions. Overall these primary office activities represent about two-thirds of total C-3 District employment.

Secondary office activities are the wholesaling, display, and customer service functions located in downtown office space. The apparel and merchandise marts and other offices for wholesale and manufacturers' sales representatives, generally serve Northern California, regional, and local markets. Importers and exporters, many involved in international and particularly Pacific Basin trade, are also in this category. A third type of secondary office activity includes retail service businesses such as hair dressers, cosmetics specialists, tailors, travel agents, airline agencies, dentists, and doctors. Many of these activities are located in upper floor space in the Union Square area. Branch banks distributed throughout the area are also classified as secondary office. These activities represent about 13 percent of C-3 District employment.

Retail trade includes stores, restaurants, and bars which serve City residents, tourists, downtown workers, and residents of other Bay Area counties often attracted for shopping and entertainment. It is estimated

TABLE IV.C.1: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY,
1981

<u>Business Activity</u>	<u>Estimated 1981 Employment</u>	<u>Percent of Total Employment</u>
<u>Primary Office</u>	172,550	63.8%
Manufacturing and Mining	18,220	
Finance, Insurance, Real Estate	68,580	
Business and Professional Services	40,650	
Transportation, Communications, and Utilities	28,740	
Government Office	16,360	
<u>Secondary Office</u>	34,770	12.9%
Wholesale and Manufacturing Sales	13,240	
Retail Services	16,300	
Branch Banks	5,230	
<u>Retail Trade (restaurants and stores)</u>	22,190	8.2%
<u>Hotels (transient and residence)</u>	13,300	4.9%
<u>Cultural/Institutional/Educational</u>	8,130	3.0%
Non-profits and Educational Facilities	4,390	
Theatres, Museums, Amusements, Institutions, Private Clubs	3,740	
<u>Industrial/Warehouse/Automotive/ Parking</u>	6,930	2.6%
<u>Building Maintenance/Security</u>	5,200	1.9%
<u>Construction</u>	7,300	2.7%
TOTAL	270,370	100.0%

TABLE IV.C.1: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY,
1981 (continued)

NOTE: Employment estimates were developed based on the Downtown EIR Employer Survey (see Appendix F and Appendix H) and the Downtown EIR Land Use Inventory (see Appendix C). The Employer Survey identified the mix of types of businesses and business functions in the various types of space (office, retail, industrial, etc.) and the employment densities for these activities. The Land Use Survey identified the amount of space of each type in the C-3 District. Separate estimates were prepared for building maintenance and construction employment. The methodology is described in Appendix H.

SOURCE: Recht Hausrath & Associates

that, in 1981, about 31 percent of C-3 District retail sales were purchases by downtown workers, about 31 percent by tourists, and the remaining 38 percent by residents of the City and other Bay Area counties./1/

Hotels in the study area provide overnight accommodations for many of the City's business, convention, and recreational visitors. Several of them also provide banquet services for major civic and business events. A small amount of employment in residential hotels is counted in this category.

The C-3 District also includes a variety of educational, entertainment, and institutional uses serving local, regional, and tourist markets.

IV. Environmental Setting

Manufacturing, storage, distribution, and repair activities also occur in the study area in industrial and warehouse type space. Businesses in these categories are located at the fringes of the C-3 District and often serve other downtown activities. Many similar businesses serving the downtown core are located outside the boundaries of the C-3 District, generally further south of Market.

In addition to the above employment, it is estimated that there are about 5,200 building maintenance and security jobs downtown. Construction activities downtown vary according to the amount of new development. For 1981, it is estimated that there were about 7,300 construction jobs in the C-3 District. These are in addition to construction firm offices permanently located in this area. Estimates were not made for messengers, delivery persons, taxi and bus drivers, and similar "floating" jobs. There are definitional problems and estimating difficulties because many split their workday between the C-3 District and locations elsewhere in the City./2/

In total, it is estimated that C-3 District employment in these activities was 270,000 jobs in 1981./3/

Employment Densities

Employment density, expressed as gross square feet of building space per employee, varies by the business activities and functions performed in the space. It also often varies by the particular operations of different companies. Average employment densities for business activity groups are shown in Table IV.C.2.

Among primary office activities, manufacturing and mining headquarters and business and professional services tend to have lower than average employment densities (more space per employee), transportation, communication and utilities (TCU) is about average and finance, insurance and real estate (FIRE) and government offices have higher than average

TABLE IV.C.2: C-3 DISTRICT BUSINESS FUNCTIONS AND EMPLOYMENT DENSITIES, 1981

<u>Business Activity</u>	<u>Functions</u>	<u>Estimated Average Employment Density (gross square feet per employee) (a)</u>
Primary Office	Executive, Administrative, Information Processing	276 (b)
Secondary Office	Wholesale, Display/Showroom, Customer Service	208 (b)
Retail Trade	Sales, Eating and Drinking	350
Hotels	Overnight Accommodations (Transient and Residence), Eating and Drinking	908 (c)
Cultural/Institutional/Educational	Administrative, Educational, Entertainment	777
Industrial/Warehouse/Automotive	Manufacturing, Storage, Distribution, Repair	783
Parking	Parking	5,100 (d)

NOTE: The estimated average employment densities are developed from the Downtown EIR Employer Survey data. Appendix H describes the methodology and provides more detailed information on employment densities.

- (a) Gross square feet of occupied building space per employee. Does not include allowance for vacant, unoccupied space.
- (b) All office activities together (primary and secondary) average 265 gross sq. ft. per employee.
- (c) On a per room basis, transient hotels average 0.74 employees per room.
- (d) Gross square feet of parking space in lots and buildings.

SOURCE: Recht Hausrath & Associates

densities. Comparisons of densities for data centers and administrative/executive offices do not indicate significant differences on the average. Some of the data centers surveyed had higher densities while others had lower densities. The differences are probably dependent upon the relative proportions of processing by computer and labor.

The higher average density for secondary office activities largely reflects the higher densities for wholesale and import/export activities conducted in person or via telecommunications, and the higher densities for retail customer services (travel agents, hair dressers, etc.). This business activity also includes showroom facilities for furniture and other large goods. The employment density for this type of space activity is lower than the overall average for the group.

The average for retail trade reflects a mix of restaurants and bars with higher densities, of smaller retail shops with higher to average densities, and of department stores with lower densities because of the space needed to display merchandise.

Employment by Subarea

The majority of C-3 District employment is located in Subarea 1, as shown in Table IV.C.3. Subareas 6 and 5 have the next largest amounts of employment. The differences in employment among subareas arise primarily from the following factors: different land areas, different densities of development, and different types of business activities with different densities of employment./4/

The comparison of the percentage distribution of employment among subareas and the percentage distribution of floor area by subareas indicates the effect of the third factor above: different mixes of business activities with different employment densities. For example, Subarea 1 has 54 percent of the employment and 49 percent of the building space. This makes sense because Subarea 1 has mainly office activities which have higher employment densities than hotels, industrial, or cultural uses. The opposite is true for Subarea 3 which has a greater mix of the activities with lower employment densities.

TABLE IV.C.3: C-3 DISTRICT EMPLOYMENT BY SUBAREA, 1981 (a)

<u>Subarea</u>	<u>Estimated Employment, 1981</u>	<u>Distribution Of C-3 District Employment</u>	<u>Distribution of C-3 District Commercial Building Space (b)</u>
1	139,660	54.2%	49.1%
2	19,250	7.4%	5.8%
3	10,560	4.1%	5.8%
4	15,350	6.0%	6.3%
5	26,200	10.2%	16.6%
6	36,430	14.1%	12.9%
7	10,420	4.0%	3.5%
Total By Subarea	257,870	100.0%	100.0%
Building Main- tenance and Construction Not Allocated by Subarea	12,500		
TOTAL	270,370		

NOTE: Based on Downtown EIR Employer Survey and Land Use Inventory as described in Appendix H.

(a) See Figure II.C.1 for map of C-3 District subareas.

(b) Percent of total gross square feet of building space, excluding parking and housing. See Table IV.B.1 for detailed distribution of space by land use and subarea.

SOURCE: Recht Hausrath & Associates

Comparison With Citywide Employment

Employment in the C-3 District can be compared with total City employment only if it is summarized into the standard industrial categories used in published employment statistics. Table IV.C.4 provides such a comparison.

TABLE IV.C.4: COMPARISON OF CITYWIDE AND C-3 DISTRICT EMPLOYMENT, 1981

<u>Industrial Classification</u>	<u>San Francisco Employment (a)</u>	<u>Estimated C-3 District Employment (b)</u>	<u>C-3 District Share of Citywide Total (c)</u>
Manufacturing and Mining	52,700	24,280	46%
Transportation, Communications, Utilities	54,100	32,960	61%
Wholesale Trade	37,200	12,470	34%
Retail Trade	69,300	22,190	32%
Finance, Insurance, Real Estate	87,900	73,810	84%
Services			
Hotels	15,600	13,300	85%
Retail Services	40,700 (d)	16,890	41%
Business and Professional Services	96,100 (e)	49,770	52%
Government	87,400	17,400	20%
Agriculture	500	---	---
Construction	<u>22,800</u>	<u>7,300</u> (f)	32%
Subtotal	564,300	270,370	
Self-Employed	<u>25,000</u> (g)	(h)	
TOTAL	589,300	270,370	46%

TABLE IV.C.4: COMPARISON OF CITYWIDE AND C-3 DISTRICT
EMPLOYMENT, 1981 (continued)

- (a) State of California Employment Development Department (EDD), Annual Average Wage and Salary Employment, March 11, 1981 series. See Appendix H for consideration of how EDD employment estimates have compared with employment estimates from other sources in previous years. No other San Francisco employment estimates for 1981 were available at this writing in November 1982.
- (b) Recht Hausrath & Associates (RHA) estimates based on Downtown EIR Employer/Employee Survey and Land Use Inventory as described in Table IV.C.1 and Appendix H.
- (c) The C-3 District shares for individual industries may be high, because the C-3 District employment figures include self-employed workers and the Citywide data does not. The C-3 District share of total employment accounts for this difference.
- (d) Includes personal services, auto and miscellaneous repair services, motion pictures, amusements and recreation, and health services including hospitals (Standard Industrial Classifications (SIC) 72, 75, 76, 78, 79, 80).
- (e) Includes business, legal, miscellaneous, professional, educational, museum, membership organizations and social services (SIC's 73, 81, 82, 83, 84, 86, 89).
- (f) Estimate for the C-3 District includes only employment directly related to building activity in the area. Employment in large, diversified firms involved in construction elsewhere is included in the services group.
- (g) Recht Hausrath & Associates estimate based on Bureau of Economic Analysis (BEA) figure of 25,700 proprietors employed in San Francisco in 1979 (BEA Regional Economic Information System, Employment by Type and Broad Industrial Source 1974-79, April 1981). The number of proprietors was in the range of four to five percent of total wage and salary employment 1974-1979.
- (h) Self-employed workers in the C-3 District are included in the employment estimates for each industry group.

SOURCE: Recht Hausrath & Associates

It is estimated that just less than one-half of the City's employment is in the C-3 District. This share varies among industry categories. Those categories with the largest shares in the study area are TCU, FIRE, hotel, and business and professional services.

TABLE IV.C.5: C-3 DISTRICT OFFICE EMPLOYMENT BY STANDARD INDUSTRIAL CLASSIFICATION, 1981

Industrial Classification	Estimated C-3 District Employment (a)	Estimated C-3 District Office Employment (b)	C-3 District Office Employment As A Percent Of Total Estimated C-3 Employment
Manufacturing and Mining	24,280	20,770	86%
Transportation, Communication and Utilities	32,960	32,960	100%
Wholesale Trade	12,470	10,700	86%
Retail Trade	22,190	0 (c)	--
Finance, Insurance and Real Estate	73,810	73,810	100%
Services			
Hotels	13,300	0	--
Retail Services	16,890	12,070	71%
Business and Professional Services	49,770	40,650	82%
Government	17,400	16,360	94%
Construction	7,300	0	--
TOTAL	270,370	207,320	77%

(a) As shown in Table IV.C.4.

(b) Includes primary and secondary office activities from Table IV.C.1.

(c) Retail trade activities located in the lower floors of office buildings are not categorized as office activities in office space, but as retail activities in retail space (even if the retail space is part of an office building).

SOURCE: Recht Hausrath & Associates

IV. Environmental Setting

Employment by these standard categories cannot be easily related to business activities and type of space. For example, it may seem odd that nearly one-half of the City's manufacturing and mining employment is in the C-3 District. However, most of that employment is involved in office functions (e.g. executive and management functions) and located in office space as shown in Table IV.C.5. The table indicates that except for retail, hotel, and construction employment, most study area employment is engaged in office activities and located in office space.

Employment Growth Trends

Total employment in San Francisco increased by 108,800 jobs from 1972 to 1981 (see Table IV.C.6). This represents an increase of about 24 percent and an average annual compound rate of growth of 2.4 percent. The largest increases in employment were in business and professional services, FIRE, and retail trade which together accounted for three-fourths of citywide job growth. The highest rates of growth were in business and professional services and in hotel employment.

Since historical employment statistics are not available for the C-3 District, trends must be approximated from citywide data as described in Table IV.C.6.

It is probable that employment in the C-3 District increased as a share of total City employment over this nine-year period. Much of the high growth in FIRE and in hotels occurred in the study area, since it includes most of the employment in these categories. A major share of the large growth in business and professional services also occurred in the C-3 District because the high-growth business activities within this category are those that are concentrated in the downtown area (business, legal, and professional services as opposed to educational and social services, museums and membership organizations). It is also likely that employment in manufacturing and mining headquarters offices in the C-3 District grew at a faster rate than the citywide employment in this category and that wholesale activities in offices also experienced higher than average rates of growth.

TABLE IV.C.6: EMPLOYMENT GROWTH, SAN FRANCISCO AND C-3 DISTRICT, 1972-1981

Industrial Classification	Citywide Employment Growth 1972-1981	Percent Of Total Employment Growth	Annual Compound Growth Rate	Comments Regarding Growth Rates for C-3 District Employment, 1972-1981
Manufacturing and Mining	3,000	2.8%	+0.66%	Probably higher growth in study area office activities offset by slower growth or decline in manufacturing activities in industrial space elsewhere in the City. Of note is the citywide growth of manufacturing employment since 1976 which reverses the declines which had occurred 1960 to 1976.
Transportation, Communications, Utilities	1,000	0.9%	+0.21%	Similar growth in study area.
Wholesale Trade	1,000	0.9%	+0.30%	Probably higher growth in study area office activities offset by slower growth or decline in wholesale activities in industrial space elsewhere in the City.
Retail Trade	15,900	14.6%	+2.94%	Probably slightly lower rate of growth in study area retail employment. Retail sales growth has exceeded employment growth and shows a somewhat different growth pattern. Most growth in apparel, specialty goods and eating and drinking.
Finance, Insurance, and Real Estate	24,400	22.4%	+3.68%	Similar growth in study area.

TABLE IV.C.6: EMPLOYMENT GROWTH, SAN FRANCISCO AND C-3 DISTRICT, 1972-1981 (continued)

Industrial Classification	Citywide Employment Growth 1972-1981	Percent Of Total Employment Growth	Annual Compound Growth Rate	Comments Regarding Growth Rates for C-3 District Employment, 1972-1981
Services				
Hotels	5,600	5.1%	+5.07%	Similar growth in study area.
Retail Services	7,900	7.3%	+2.39%	Probably similar rate of growth in study area but lower amount of growth because of large growth in health services elsewhere in the City.
Business and Professional Services	42,200	38.8%	+6.64%	Higher growth in study area because of strong growth of business, legal, and miscellaneous professional services.
Government	2,500	2.3%	+0.32%	Similar growth in study area.
Agriculture	200	0.2%	+5.84%	NA
Construction	5,100	4.7%	+2.85%	Probably higher growth in study area because of large amount of new construction downtown.
TOTAL	108,800	100%	+2.41%	

NOTE: There is no historical information on employment in the C-3 District. Therefore, statistics for a larger area (the City) are reviewed with considerations as to both characteristics of the share of City employment in each industrial classification that occurs in the C-3 District and how the probable growth patterns of that share compared to the citywide pattern.

SOURCE: State of California Employment Development Department Annual Average Wage and Salary Employment, March 1981 and Recht Hausrath & Associates.

IV. Environmental Setting

Job Characteristics: Occupations, Wages and Salaries

Employment in the C-3 District includes jobs in a variety of occupations. Wages and salaries for these jobs also cover a wide range. A summary of occupations and wages and salaries for different types of business activities is provided in Table IV.C.7./5/

The different mix of occupations among business activities reflects the different functions that each performs. For example, hotels employ mainly service workers (to provide lodging and food services) and clerical workers (for reservations and bookkeeping), while retail trade primarily employs sales workers (to sell merchandise), service workers (for restaurant and bar service) , and managers (to oversee store operations).

Primary office activities employ a large share of clerical workers involved in executive/administrative functions (corporate headquarters) and in information processing (data centers). The managers in this group also tend to be divided between those two functions. Workers in the skilled crafts and operative occupations in offices are generally involved in information processing functions (computer and telecommunications, systems operations and maintenance). The professional occupations are those providing technical and business expertise (lawyers, consultants, accountants, etc.) either in smaller firms or as part of the executive/administrative functions of larger organizations.

The types of firms and functions in secondary office activities have an occupational mix different from that of primary office activities. The large share of managerial jobs reflects the prevalence of small firms with on-site managers and proprietors. The clerical workers in secondary office activities include bank tellers, counter clerks, receptionists, bookkeepers, and secretary/typists. Secondary office activities also employ operatives as delivery persons, tour leaders, dress makers, photo processors, and machine operators (ticket machines, jewelry polisher, and other precision machines)./6/

TABLE IV.C.7: OCCUPATION AND WAGE/SALARY DISTRIBUTIONS FOR C-3 DISTRICT BUSINESS ACTIVITIES, 1981

Occupations	Business Activity						
	Total C-3 District Jobs 1981	Primary Office	Secondary Office	Retail	Hotel	Cultural/ Institutional/ Educational	Industrial Bldg. Maint./ Construction
	No. %	%	%	%	%	%	%
Professional/ Technical	64,500 23.9	34	7	1	4	47	0
Managerial/ Administrative	51,900 19.2	20	35	9	3	21	5
Clerical	77,180 28.5	37	22	4	18	22	1
Sales	18,210 6.7	3	6	48	2	small	0
Service	26,280 9.7	1	2	36	68	8	33
Crafts, Operatives and Other	32,300 12.0	5	28	2	5	2	61
Total	270,370 100.0%	100	100	100	100	100	100
Wages and Salaries (1982 Dollars)							
Less than \$12,000	29,840 11.0	8	22	28	2	17	3
\$12,000 - 14,999	53,130 19.7	12	18	38	71	25	31
\$15,000 - 24,999	88,800 32.8	37	21	33	21	28	30
\$25,000 - 49,000	74,510 27.6	31	33	1	6	29	36
\$50,000 - 74,999	13,700 5.1	7	3	0	small	1	0
\$75,000 and above	10,390 3.8	5	3	0	small	0	0
Total	270,370 100.0%	100	100	100	100	100	100
Percent Part-Time	12.0	23	39	15	37	NA	

TABLE IV.C.7: OCCUPATION AND WAGE/SALARY DISTRIBUTIONS FOR C-3 DISTRICT BUSINESS ACTIVITIES,
1981 (Continued)

NOTE: With the exception of information for building maintenance and construction employment, this table shows results of the Downtown EIR Employer Survey. See Appendix F for a description of the survey methodology. The percentages are of jobs (full-time and part-time) and not necessarily employees. In the case of part-time jobs, it is possible that one employee could hold two jobs. With job sharing, it is also possible that one full-time job could be held by two workers. The information for business activities is provided to highlight the differences among these groups. It is likely that the figures for jobs in the C-3 District are more accurate than are the percentages for individual groups. Survey results from industrial, parking, and automotive businesses (limited responses) were combined with RHA estimates for building maintenance and construction jobs.

Building maintenance and security employment is in the services occupational category. (Employment Development Department, Occupations in Selected Industries, San Francisco City and County, September 1981). Estimates of occupation and wage and salary characteristics for construction employment are based on conversations with Stan Smith, San Francisco Building and Construction Trades Council, October 27, 1982.

SOURCE: Recht Hausrath & Associates

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The occupations within the group of cultural/institutional/educational activities reflect the office functions of non-profit organizations, the high share of professionals employed in education, the service jobs in private clubs and lodges, the on-site managerial jobs for all of these operations, and the wide range of jobs in the performing arts.

Building maintenance and parking activities employ service workers. Industrial activities employ skilled craft workers and operatives, while construction employment is primarily in the skilled crafts occupations.

The distribution of employees across wage and salary categories also shows differences among business activity groups (see Table IV.C.7). These differences reflect the mix of occupations within a group (described above), the range of salaries within occupations, and the extent to which jobs are part-time.

Retail trade and hotels have the largest shares of jobs in the lower wage categories. The wage and salary figures shown in Table IV.C.7 do not include tips, which are particularly important for restaurant and hotel workers. The high share of retail jobs in the lowest salary category might also reflect the relatively high percentage of jobs which are part-time. The absence of retail jobs in the highest wage categories reflects the fact that company owners and corporate staff (for chain operations) were not located on-site for the establishments surveyed for the Downtown EIR Employer Survey.

Primary office activities have the highest overall wages and salaries. This is consistent with the high shares of professionals and managers, clerical workers with salaries at the higher end of the range for those jobs, and the low percentage of part-time jobs. Secondary office activities include a large number of part-time positions and a high share of operatives in the lower salary ranges, explaining the different wage and salary distribution shown in Table IV.C.7.

Combining information about business activities, occupations, and wages and salaries provides a description of the skill and experience levels for

IV. Environmental Setting

C-3 District job opportunities. Generally, jobs with salaries less than \$15,000 include entry level positions without specific education and experience requirements. These jobs represent 31 percent of C-3 District jobs. They are primarily in sales, service, clerical, and operative occupations. About 60 percent are jobs in office activities and about 30 percent are in retail trade and hotels.

Jobs paying \$15,000 to \$24,999 include another 34 percent of C-3 employment. This group includes a large number of clerical office jobs and jobs for entry level professionals. The remaining 35 percent of jobs, paying over \$25,000, includes primarily professional and managerial jobs, many of which are more senior positions requiring higher education and more years of experience.

Demographic Characteristics of C-3 District Workers

Demographic characteristics of the C-3 District workforce provide further description of the types of employees who hold different types of jobs. A summary of these demographic characteristics is presented in Table IV.C.8.

Overall, the C-3 District workforce is fairly young (41 percent are ages 25-34; 65 percent are ages 25-44) and includes slightly more males than females (53 percent male). About one-quarter are Asian, about two-thirds are white, and about 10 percent are black and other races. About six percent are of Spanish origin. About 28 percent were not born in the United States. Over half (57 percent) live in San Francisco./7/

Primary office workers are fairly similar to the overall average since they make up such a large share of the total. Comparisons indicate that they tend to be older than average, include slightly more females than males, and include proportionally fewer minority group members. They also have a lower share of workers who are City residents.

Those employed in secondary office activities include many who are young, male, foreign born, Asian and San Francisco residents. While it is probable that this pattern is affected by the relatively small sample size

IV. Environmental Setting

for such a diverse group of firms, it does highlight the large share of entry level jobs in the retail services group and the importance of Asian businesses and workers in the wholesale and retail service activities in the C-3 District.

Retail workers are also young, and over one-half are women. They tend to be white, City residents and not to be foreign born. A relatively large share of retail workers are of Spanish origin.

Hotel workers show more differences from the overall average. They include a higher than average share of both younger and older workers; they have the highest share of women workers; over one-half are foreign born; and they have higher than average shares of workers who are Asian, black, Spanish-origin, and of other ethnic groups (Pacific Islanders, South American, Mexican, Puerto Rican, etc.). They also have the highest share of City residents.

Job tenure characteristics show a very dynamic pattern. On the average, when interviewed, employees had worked in downtown San Francisco for eight years, had worked for their present employer for six years, and had been at their current work address almost four years./8/ These figures represent about one-half of the average, total number of years that employees work in the C-3 District, work for one employer, and work at one work address./9/ Among the business activities, primary office shows the most stable pattern, while the other groups show more turnover.

The survey responses also indicate that each year about 20 percent of the workforce is employed downtown for the first time./10/ This change results from the growth of employment, from the movement of businesses in and out of the C-3 District, and from the movement of workers who change their place of work (between C-3 District and other locations). This last factor probably has the most effect on the number of persons newly employed in the C-3 District each year. The figures also indicate that about 27 percent of the workforce changes jobs (employers) each year./10/ This reflects all of the factors mentioned above, as well as changes made among jobs within the C-3 District.

IV. Environmental Setting

TABLE IV.C.8: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981

	Workers By Business Activity					
	Total C-3 Workforce	Primary Office	Secondary Office	Retail	Hotel	Cultural/ Institutional/ Educational
	%	%	%	%	%	%
<u>Age</u>						
Under 25	11.8	11	4	16	13	2
25 - 34	41.3	34	69	51	39	52
35 - 44	23.3	27	18	13	21	26
45 - 54	13.6	17	3	10	10	11
55 Plus	10.0	11	6	10	17	9
<u>Sex</u>						
Female	46.5	51	22	52	60	49
Male	53.5	49	78	48	40	51
<u>Foreign Born</u>						
Yes	27.9	22	65	6	56	42
No	72.1	78	35	94	44	58
<u>Race/Ethnicity</u>						
Asian	25.4	14	66	22	42	33
Black	5.7	7	1	1	11	10
White	64.2	74	32	73	29	55
Other	4.7	5	1	4	18	2
Spanish Origin (a)	6.8	7	1	13	13	5
<u>San Francisco Resident</u>						
Yes	56.8	49	65	77	82	73
No	43.2	51	35	23	18	27

TABLE IV.C.8: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981 (Continued)

	Workers By Business Activity					
	Total C-3 Workforce No.	Primary Office No.	Secondary Office No.	Retail No.	Hotel No.	Cultural/ Institutional/ Educational No.
<u>Job Tenure (b)</u> (average number of years)						
● Work Down- town	7.9	9.1	4.8	7.9	6.6	4.8
● At Present Employer	6.1	7.2	3.6	4.9	4.7	2.9
● At Present Work Address	3.8	4.4	1.9	3.2	4.4	2.4

NOTE: The information in this table is for C-3 District employees and is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the secondary office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not included here for workers in the industrial group because of the small number of responses received. Section IV.D, Housing, contains more detailed information on employee residence patterns and on demographic characteristics by county of residence.

- (a) Spanish origin was a separate response from the ethnicity response reported above.
- (b) These responses represent the average number of years employed when interviewed. The average, total length of time would be longer since tenure for most of those interviewed would continue beyond the survey date. The average, total number of years can be estimated by doubling the figures shown here (as explained in note 9).

SOURCE: Recht Hausrath & Associates

Household Characteristics of C-3 District Workers

Information was also collected about C-3 District worker households in the Downtown EIR Employee Survey. The summary in Table IV.C.9 provides further insights into the nature of the downtown workforce./11/

Overall, about 41 percent of the workers reside alone or in households of unrelated individuals. Forty-six percent are in married couple households. About one-third of the households have children./12/ On the average, workers in the C-3 District live in households with 2.7 persons, 0.6 children (under 18 years of age), and 1.8 workers./13/

Comparison of household demographics among business activities indicates no major differences except for hotel workers. Hotel worker households are larger and include more families and more children. Of note is the relatively high share of hotel workers in households with two or more families. Hotel worker households also have more workers per household, reflecting the effect of two or more families living together and of households with children who are employed.

The distribution of downtown worker household incomes is also shown in Table IV.C.9. Household incomes combine the wages and salaries of all household workers as well as income from other sources (pensions, investments, tips, etc.). The households of workers in office activities tend to have higher incomes. Retail and hotel worker households have lower than average household incomes and include fewer numbers in the higher income categories.

Comparison between the overall distribution of worker household incomes and wages and salaries (Table IV.C.7) generally indicates that household incomes are higher than wages and salaries. This is expected, since on average, there is more than one worker per household./14/

TABLE IV.C.9: HOUSEHOLD CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981

Household Composition	Total C-3 District Workforce	Workers By Business Activity			
		Primary Office	Secondary Office	Retail	Cultural/ Institutional/ Educational
	%	%	%	%	%
Single Individual	23.9	28	9	31	22
Unrelated Individuals	17.5	12	41	23	39
Couple - No Children	20.2	21	21	18	13
Couple - With Children	25.9	26	25	15	17
Single-Parent	7.6	9	3	4	7
Two or More Families	2.8	2	1	4	1
Other	2.1	2	small	5	1
<hr/>					
	No.	No.	No.	No.	No.
Persons Per Household	2.7	2.5	2.5	2.5	2.4
Children Per Household	0.6	0.5	0.4	0.4	0.6
Workers Per Household	1.8	1.7	1.6	1.9	1.7
<hr/>					

TABLE IV.C.9: HOUSEHOLD CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981
(Continued)

Household Incomes (1981)	Total C-3 District Workforce %	Workers By Business Activity			
		Primary Office %	Secondary Office %	Retail %	Cultural/ Institutional/ Educational Hotel %
Less than \$12,000	13.4	5	43	18	29 28
\$ 12,000 - 14,999	6.1	6	3	12	13 7
\$ 15,000 - 24,999	23.4	25	12	36	24 25
\$ 25,000 - 49,999	32.1	36	13	29	28 32
\$ 50,000 - 74,999	17.8	19	25	5	6 8
\$ 75,000 - 99,999	4.5	6	1	0	small small
\$100,000 Plus	2.7	3	3	0	small small

NOTE: The information in this table is for the households of C-3 District employees as tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the secondary office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not included here for workers in the industrial group because of the small number of responses received. More detail on employee households by county of residence and type of housing is provided in the housing section (IV.D.).

SOURCE: Recht Hausrath & Associates

C-3 DISTRICT 1984 SETTING

Business Activities and Employment

Economic analysis of business activities and employment produced forecasts of future C-3 District employment and job growth./15/ The 1984 employment setting includes three years of growth from the 1981 situation. Employment by business activity and subarea for 1984 is summarized in Table IV.C.10.

Employment growth is expected in all business activity groups except one, with the strongest growth in office activities. The decline is expected in the industrial/warehouse/automotive/parking group and reflects the movement of these types of uses out of the C-3 District.

Since the 1984 setting reflects the projects under construction as of mid-1982, the distribution of employment growth among subareas largely reflects the locations of these projects. It also includes employment changes in locations where the conversion of some existing space to office uses is expected.

Comparison of forecast employment growth 1981 to 1984 and the space added during that period (see Land Use and Real Estate Development Setting, Section IV.B) indicates that the increase in the supply of space is larger than the increase in the demand for space as indicated by the employment analysis. Thus, not all of the space available in 1984 is expected to be fully occupied by that time./16/

In addition to C-3 District permanent employment, construction employment is expected to average 5,270 jobs per year over the 1981 to 1984 period.

Occupations and Wages and Salaries

The number of jobs with the characteristics previously described in Table IV.C.7, was estimated for 1984 and is summarized in Table IV.C.11. These estimates assume that there would be no major changes in the distribution of characteristics for each business activity group between 1981 and 1984./17/

TABLE IV.C.10: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY AND SUBAREA, 1984

Business Activity	Subareas							Total C-3 District	Percent of Employment
	1	2	3	4	5	6	7		
Primary and Secondary Office	141,400	18,860	6,990	13,870	11,450	26,190	4,460	223,220	79.5%
Retail Trade	5,850	470	1,000	890	3,370	7,320	4,300	23,200	8.3%
Hotel	2,590	--	390	70	7,510	3,150	110	13,820	4.9%
Cultural/Institutional/Educational	1,410	160	950	320	3,330	660	1,510	8,340	3.0%
Industrial/Warehouse/Automotive/Parking	430	1,130	2,990	210	1,370	284	90	6,500	2.3%
Total Employment Allocated To Subareas	151,680	20,620	12,320	15,360	27,030	37,600	10,470	275,080	
Percent of Employment	55.1%	7.5%	4.5%	5.6%	9.8%	13.7%	3.8%	100%	
Building Maintenance	--	--	--	--	--	--	--	5,780	2.0%
TOTAL								280,860	100%

NOTE: Based on employment analysis described in Appendix H.

SOURCE: Recht Hausrath & Associates.

TABLE IV.C.11: C-3 DISTRICT EMPLOYMENT BY OCCUPATION
AND WAGES AND SALARIES, 1984

<u>Occupations</u>	<u>Jobs</u>	<u>Percent</u>
Professional/Technical	69,720	24.8%
Managerial/Administrative	54,510	19.4%
Clerical	82,490	29.4%
Sales	19,000	6.8%
Service	27,760	9.9%
Crafts	13,730	4.9%
Operatives	13,440	4.8%
Other	210	small
TOTAL	280,860	100%

<u>Wages and Salaries (1982 Dollars)</u>	<u>Jobs</u>	<u>Percent</u>
Less than \$12,000	31,720	11.3%
\$12,000 - 14,999	55,260	19.7%
\$15,000 - 24,999	95,020	33.8%
\$25,000 - 49,999	72,800	25.9%
\$50,000 - 74,999	15,060	5.4%
\$75,000 and above	11,000	3.9%
TOTAL	280,860	100%

NOTE: Based on Downtown EIR Employer Survey and Employment Analysis. See Appendix H for more detail.

SOURCE: Recht Hausrath & Associates

NOTES - Business and Employment

- /1/ These estimates are only approximate. They were derived from the Downtown EIR Employer Survey and the retail analysis, done as a part of the employment forecasting effort, as described in Appendix H.
- /2/ As explained in Table IV.C.1, the C-3 District employment estimates for all categories except building maintenance and construction were developed based on the Downtown EIR Employer Survey and Land Use Inventory. The survey-based estimates, however, did not include workers whose base of operation is outside the C-3 District and others not covered by the survey sampling procedures (described in Appendix F). Estimates of building maintenance and construction jobs were developed separately. The methodology for all estimates is explained in Appendix H.
- /3/ Since employment statistics are not available for San Francisco's downtown area, survey work and analysis were done as a part of this EIR to identify and describe downtown jobs and workers. This provides a description of what currently exists and a basis for forecasting future conditions, including the 1984 setting. Much of the description of the setting is for 1981/82 rather than 1984 so as to report the findings of the analysis separate from the expectations of future conditions. Further, some of the detailed characteristics are only available for the present situation.
- /4/ Different vacancy rates could also affect the distribution of employment. They were not a major factor in the 1981 estimates, however.
- /5/ It should be noted that the wage and salary distributions shown here are from the Downtown EIR Employer Survey and represent wages and salaries paid for jobs. In the case of part-time jobs, it is possible that an employee could hold more than one job. If so, the number of jobs is overstated and the wages received by those employees would be understated. The wages and salaries shown here do not represent household incomes which are considered later in this section and in Section IV.D, Housing. The distribution of household incomes for downtown workers would differ from the distribution of wages and salaries shown here if there is more than one worker per household, if the worker holds more than one job, or if the household receives income from other sources (tips, pensions, savings, investments, etc.).
- /6/ It is possible that the large share of operatives in secondary office jobs overstates the actual figure, since the sample of firms in this group is not large given the wide variety of businesses that are included here. However, it is useful in indicating the relatively large share of jobs of this type.

NOTES - Business and Employment (continued)

- /7/ More detailed information on residence patterns and employee demographic characteristics by county of residence is included in Section IV.D, Housing.
- /8/ It can be noted that the averages of the responses to the job tenure questions are higher than the median responses, indicating the effect of respondents with very long tenures. The median responses (middle of the distribution) are as follows: work downtown, 5 years; work at present employer, 3 years; work at present work address, 2 years.
- /9/ The survey responses indicate the number of years that respondents had worked in the C-3 District (or for their current employer or at their present work address) when interviewed. These responses do not indicate the total length of time that workers will be employed in the C-3 District since most of those interviewed will continue to work downtown beyond the date of the survey. On the average, the responses should represent one-half of the total length of time that respondents will work in the C-3 District. In other words, there was an equal probability of interviewing those in the early years of their tenure downtown, those near the end of their tenure, and those near the middle of their time working downtown. Thus, the responses should be doubled to represent the average total number of years.
- /10/ In addition to the average and median responses to the job tenure questions, the distribution of responses was also tabulated. The distributions indicate the percentages of all C-3 District employees who had worked in the C-3 District (or for their current employer or at their present work address) for one year or less. If it is assumed that 1981-82 was typical, these distributions identify the turnover that occurs each year. The distributions of the responses indicate the following percentages of employees who responded one year or less to questions about: work downtown, 19.7 percent; work at present employer, 26.6 percent; work at present work address, 36.3 percent.
- /11/ It should be noted that the responses in Table IV.C.9 are percentages of workers in households with various characteristics. The percentages do not necessarily represent households since more than one worker per household could have been interviewed. As discussed in the housing section, on the average, there is more than one C-3 District worker in households with downtown workers.
- /12/ For the total C-3 District workforce, it appears that many of those respondents under age 25 reside at home with one or more parents. Thus, responses to the question about household type indicating households with children could have been made by the child as well as the parent. The number of children per household probably does not include workers, however, since children were defined as under 18 years of age.
- /13/ The difference between persons-per-household and children-plus-working-adults-per-household provides an indication of non-working adults per household. Overall, this figure is 0.3 non-working adults

NOTES - Business and Employment (continued).

per household. There appear to be more non-working adults in households with workers employed in office activities than in the other business activities. This is probably influenced by income and also results from the mix of household types in each group.

/14/ There are inconsistencies, however, in the lowest income category. The share of workers from the employee survey who indicated household incomes in this category exceeds the share of jobs with wages and salaries of this amount (as given by the employers). There are several possible explanations: employees were asked to indicate their 1981 household incomes, while employers were asked wages and salaries as of the time of interview (1982); employees might not have worked at the same job in 1981 or may not have worked all year, whereas wages and salaries are annual figures; there may be some confusion on the part of the respondents over part-time and full-time employment and inconsistencies in how incomes and wages and salaries were reported; those employees who responded to this question may not be fully representative of those employed; and language might have been a problem for employee respondents. If both the two lowest income categories and two lowest wage and salary categories are combined, the results are more consistent.

/15/ The employment analysis is explained in Appendix H.

/16/ The 1984 employment setting was not developed by "filling up" the additional space due to new construction and conversions, but was done by forecasting employment (independent of space), and then considering how much space would be demanded. From this comparison, it was determined that the additional space is not likely to be fully occupied in 1984.

Since the forecasts are not fully sensitive to business cycles, the 1984 employment setting might not be met by 1984 depending upon the timing of recovery from the current recession. If it were not achieved, there would be a larger amount of unoccupied space in 1984.

/17/ Estimates of numbers of jobs by occupation and wages/salaries were derived from occupation and wage/salary matrices and employment forecasts for all business activity groups. These were combined into the six major groups in Table IV.C.7 for presentation purposes. Changes between 1981 to 1984 in overall C-3 District employment by occupation and wages/salaries arise because of changes in the number of jobs in each business activity over this period.

D. RESIDENCE PATTERNS AND HOUSING FOR C-3 DISTRICT
WORKERS

C-3 DISTRICT BACKGROUND

Residence Patterns of C-3 District Workers

The Downtown EIR Employee Survey identified the current residence patterns of C-3 District employees./1/ As shown in Table IV.D.1 the majority of workers, 56.8 percent, live in San Francisco. The next largest numbers live in Alameda, San Mateo, Contra Costa and Marin counties, in that order. Together these four counties currently house 40.7 percent of the C-3 District workforce. The remaining 2.5 percent reside in Solano, Sonoma, Santa Clara, and Napa counties. Only a very few workers live outside the nine-county Bay region.

When C-3 District workers residing in the region outside of San Francisco are grouped by commute corridors, more than one-half live in the east bay (57 percent), more than one-quarter in the south bay (27.7 percent), and the remainder in the north bay (15.3 percent).

Residence patterns tabulated for the regional study areas used in transportation analysis are shown in Figure IV.D.1. This pattern illustrates that most of the workers residing in Alameda County live on the west side of the hills (93 percent compared to 7 percent). The opposite is true for Contra Costa County where most C-3 District workers live in the eastern part of the county (82 percent compared to 18 percent). Workers residing in San Mateo County are more evenly divided between the eastern and western portions of the county (61 percent living on the eastern or bay side and 39 percent on the west side).

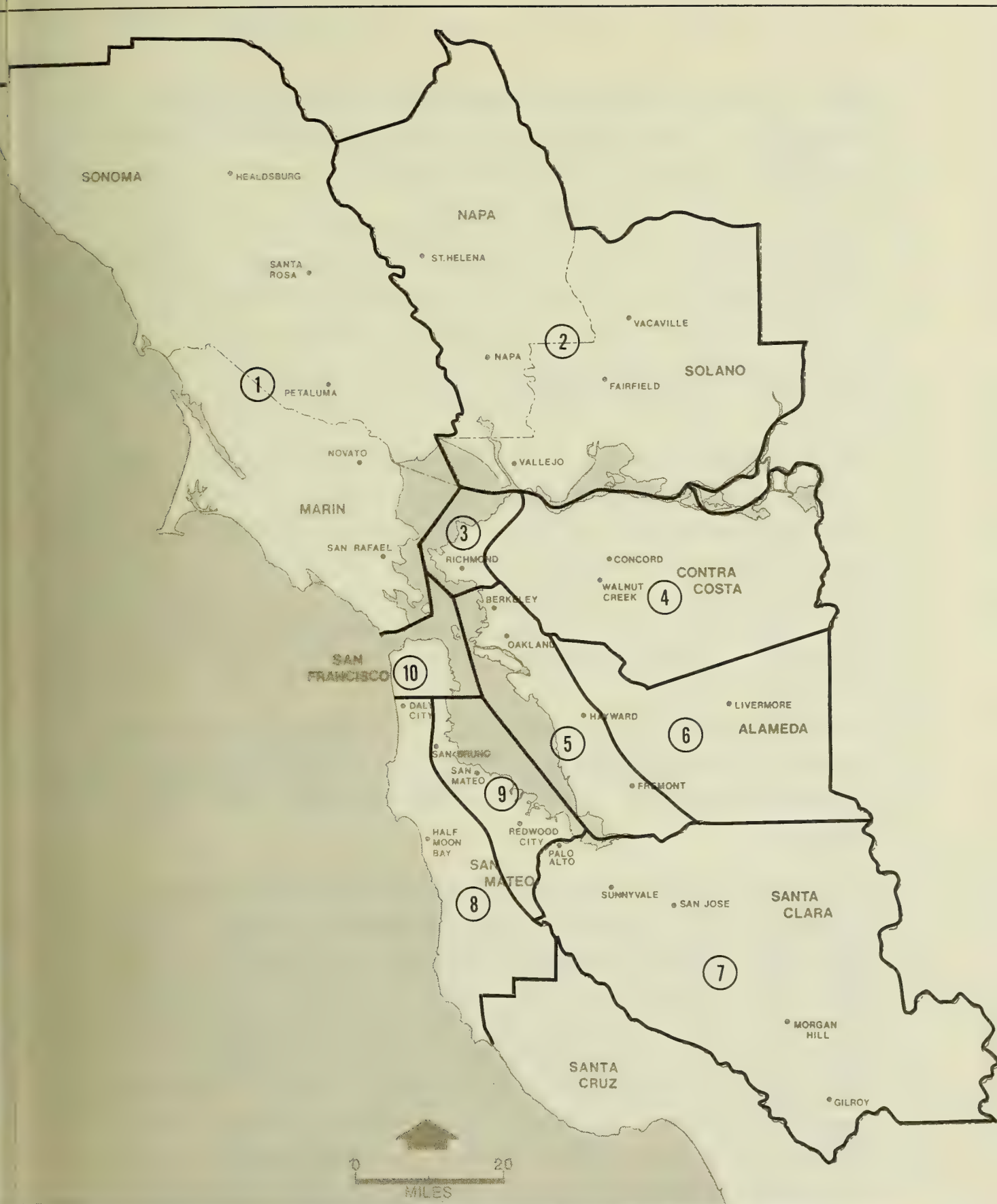
TABLE IV.D.1: RESIDENCE PATTERNS FOR C-3 DISTRICT EMPLOYEES, 1981

<u>County of Residence</u>	<u>Distribution of C-3 District Employees</u>	
	<u>Number</u>	<u>Percent</u>
San Francisco	146,570	56.8%
East Bay	63,330	24.6%
Alameda	32,780	12.7
Contra Costa	27,760	10.8
Solano/Napa (a)	2,790	1.1
South Bay	30,860	12.0%
San Mateo	29,170	11.3
Santa Clara	1,690	0.7
North Bay	16,990	6.6%
Marin	15,260	5.9
Sonoma	1,730	0.7
Other	120	small
TOTAL	257,870	100%

NOTE: Residence patterns are tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The totals shown here exclude construction workers and building maintenance/security workers that were not included in the survey sample (estimated at 12,500 jobs in 1981; see Table IV.C.1). The residence patterns of these two groups of workers are discussed in the text.

(a) Most of these workers reside in Solano County.

SOURCE: Recht Hausrath & Associates



PERCENT OF WORKFORCE RESIDING IN EACH AREA

Marin/Sonoma	6.6%	6	Eastern Alameda	0.8%
Napa Solano	1.1%	7	Santa Clara	0.7%
Western Contra Costa	2.0%	8	Western San Mateo	4.4%
Eastern Contra Costa	8.9%	9	Eastern San Mateo	6.9%
Western Alameda	11.9%	10	San Francisco	56.8%

FIGURE IV.D.1:

REGIONAL HOUSING DISTRIBUTIONS
OF C-3 DISTRICT WORKERS, 1982

SOURCE: Recht Hausrath & Associates

Residence patterns were found to differ for workers with different types of jobs. Table IV.D.2 identifies residence patterns for workers employed in business activities of various types.

Compared to all C-3 District workers, proportionally fewer of those employed in primary office activities live in San Francisco and the south bay, and greater shares reside in the east bay and the north bay./2/ Proportionally greater than average shares of workers in all other business activities reside in San Francisco. The percentages who live in San Francisco are particularly high for hotel and retail workers.

Outside of San Francisco, a relatively high share of secondary office workers live in the south bay in San Mateo County. For cultural/institutional/educational workers, a relatively high share live in the east bay, primarily in Alameda County. The largest shares of retail workers who do not live in the City, live in San Mateo and Contra Costa counties. For hotel workers living outside the City, most live in Alameda and San Mateo counties.

The survey also included workers employed in industrial/warehouse/automotive/parking activities. Generally, the results indicate that most of these workers live in San Francisco (the majority) or San Mateo County./3/

The residence patterns derived from the survey do not include construction workers or building maintenance/security personnel. In 1981, these jobs represented about five percent of those working in the C-3 District (see Table IV.C.1). For construction workers, it is estimated that about 30-40 percent of the members of the unions registered with the San Francisco Building and Construction Trades Council live in San Francisco./4/ Those who construct buildings in the C-3 District are drawn from this pool; on average, their residence patterns are likely to be similar to the pattern for all those in the pool. Residence patterns for building maintenance/security workers are probably similar to the patterns for the non-office business activities in the C-3 District which show a higher than average percentage of City residents. If an

TABLE IV.D.2: EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 1981

County of Residence	Total C-3 District %	Workers By Business Activity				Cultural/Institutional/Educational %
		Primary Office %	Secondary Office %	Retail %	Hotel %	
San Francisco	56.8	48.9	64.9	77.2	82.4	72.7
Alameda	12.7	16.0	6.6	3.9	7.9	12.4
Contra Costa	10.8	14.2	3.2	7.0	1.4	4.6
Solano/Napa	1.1	1.5	0.0	0.0	0.3	0.0
East Bay	24.6	31.8	9.8	10.9	9.6	17.1
San Mateo	11.3	10.0	20.0	9.5	6.6	8.4
Santa Clara	0.7	0.9	0.2	0.0	0.0	0.1
South Bay	12.0	10.9	20.2	9.5	6.6	8.5
Marin	5.9	7.4	5.0	2.0	1.4	1.4
Sonoma	0.7	0.9	0.1	0.4	0.0	0.3
North Bay	0.6	8.3	5.1	2.4	1.4	1.7
Other	small	0.1	0.0	0.0	0.0	0.0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: The information in this table is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the secondary office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not included here for workers in the industrial group because of the small number of responses received. Table IV.C.1 identifies the number of workers in each business activity.

SOURCE: Recht Hausrath & Associates

estimate were developed, it would be reasonable to assume that the combined residence patterns for building maintenance/security and construction workers are similar to the average pattern for all of the surveyed workers in the C-3 District./5/

Observed differences in residence patterns among business activities reflect a combination of many interrelated factors. These include the occupational and wage/salary characteristics of the jobs in each group. These also include the demographic and household characteristics of the workers employed in the different jobs. The job and workforce characteristics for different business activities are described in the employment setting section (see particularly Tables IV.C.7, IV.C.8, and IV.C.9). Description of the demographic and household characteristics of workers by the county in which they reside is presented in the next part of this section to further explain the observed residence patterns described above.

Differences in residence patterns can also be observed between workers in different subareas of the C-3 District. However, it appears that these variations largely reflect differences in the types of business activities in each subarea and in the different job and workforce characteristics associated with each activity. For example, differences in residence patterns between the Union Square area, Subarea 6, and the financial district area, Subarea 1, arise primarily because one subarea has mainly primary office activities and the other subarea has a mix of retail, hotel, and secondary office activities.

It is also likely that residence patterns vary by subarea because of differences in the accessibility of the work place from residential areas. It is difficult to isolate the effect of accessibility, however, since business activities vary by location as well.

Comparison of primary office activities in Subareas 1 and 2 provides an indication that accessibility has an effect on residence patterns. Compared to Subarea 1, primary office workers in Subarea 2 show a lower percentage who live in San Francisco and higher percentages

IV. Environmental Setting

residing in the east bay and south bay. Portions of Subarea 2 are more accessible to the AC Transit terminal, BART, the SP Depot, and to the major freeways to the east bay and south bay than are areas of Subarea 1.

However, even within the major business activity categories used in this study, there is variation in the residence patterns among different types of businesses which perform different functions. For example, within the category of primary office activity, employees in smaller business service firms have a somewhat different average residence pattern from employees in large data centers or from employees in large utilities or large corporate headquarters. These differences do not appear as large, however, as the differences among the major business activity categories as shown in Table IV.D.2.

Nevertheless, since business functions tend to vary by location within the C-3 District (data centers in Subareas 3 and 4 and headquarters offices in Subarea 1, for example), differences among subareas in residence patterns for workers in the same major business activity can be at least partly explained by different types of businesses and functions employing different types of labor. Thus, it is very difficult to separate the effects of business function and of transportation accessibility in explaining differences in residence patterns among subareas.

Since there are differences in residence patterns among business activities and subareas, the results of the C-3 District analysis would not necessarily apply for other parts of the City. Comparison of the results of the Downtown EIR Employee Survey with the results of a similar survey conducted recently in the areas south of Market/Folsom Streets outside the C-3 District indicates that there are differences in residence patterns for workers in these areas.^{6/} Overall, the C-3 District has a larger share of workers who reside in San Francisco and in the east bay while the south of Market/Folsom area has proportionally higher shares of workers who live in the south bay and the north bay. These differences appear to reflect different types of business functions in

each diverse area which offer different types of jobs that employ different types of workers. Differences in job characteristics and workforce demographics appear to be the primary factors behind the different residence patterns. Yet differences in the accessibility of each area probably also play a role.

Demographics By Place Of Residence

The observed residence patterns of C-3 District workers are a result of individual decisions by households based on housing needs and preferences, ability to pay for housing, and on the housing choices available. Analysis of the survey data from the perspective of the types of C-3 District workers and worker households who now reside in San Francisco and in the other counties provides insights into the housing decisions that these consumers have made. In other words, a description of "who lives where" describes the past and present role of each place of residence in providing housing for those who work in the C-3 District.

The survey data by place of residence are presented in Table IV.D.3. Review of the data indicates that there are differences in the types of worker households who currently reside in each county./7/

Workers Residing in San Francisco

Although primary office workers include the largest number of C-3 District workers who reside in San Francisco, the percentage that they represent of all C-3 District workers who live in the City is lower than similar percentages for all other counties. Workers in all of the other business activities represent higher than average shares of those who reside in San Francisco.

Among occupations, San Francisco houses proportionally fewer professionals and managers and greater relative shares of workers in all other occupations. Clerical workers represent the largest number of City residents who work in the C-3 District. Of note is the large percen-

IV. Environmental Setting

TABLE IV.D.3: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS AND HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981

Business Activity(b)	Total C-3 Workforce %	Workers By County					
		San Francisco %	Alameda %	Contra Costa %	San Mateo %	Marin %	Other (a) %
Primary Office	66.9	57	84	88	59	84	96
Secondary Office	13.5	15	7	4	24	11	1
Retail	8.6	12	3	6	7	3	1
Hotel	5.2	8	3	1	3	1	1
Other	5.8	8	3	1	7	1	1
<u>Occupation(b)</u>							
Professional/ Technical	27.9	23	43	38	24	36	36
Managerial/ Administrative	16.2	11	19	23	27	33	22
Clerical	35.1	37	35	32	34	23	34
Sales	5.7	7	small	5	3	7	1
Service	4.0	5	2	1	8	small	3
Crafts, Operatives & Other Labor	11.1	17	1	1	4	1	4
<u>Age</u>							
Under 25	11.8	15	11	9	9	2	12
25-34	41.3	43	44	26	34	36	33
35-44	23.3	19	27	37	36	21	31
45-54	13.6	13	8	18	14	21	15
55 Plus	10.0	10	10	10	7	20	9
Median Age	34.0 yrs.	31.8 yrs.	33.8 yrs.	38.9 yrs.	36.8 yrs.	37.3 yrs.	N.A.
<u>Foreign Born</u>							
Yes	27.9	33	21	22	51	10	32
No	72.1	67	79	78	49	90	68
<u>Race/Ethnicity</u>							
Asian	25.4	29	18	20	42	5	24
Black	5.7	5	18	6	5	3	9
White	64.2	61	57	71	46	91	61
Other	4.7	5	7	3	7	1	6
Spanish Origin(c)	6.8	7	7	4	15	6	10

TABLE IV.D.3: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS AND HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981
(Continued)

		Workers By County					
	Total C-3 Workforce %	San Francisco %	Alameda %	Contra Costa %	San Mateo %	Marin %	Other (a) %
<u>Household Composition</u>							
Single Person	23.9	30	17	15	14	8	8
Unrelated Persons	17.5	23	13	6	3	20	1
Couple-No Children	20.2	12	23	30	28	42	23
Couple-Children	25.7	20	30	38	45	24	54
Single-Parent	8.8	11	12	10	7	4	10
Two or More Families	1.9	2	3	small	1	1	2
Other	2.0	2	2	1	2	1	2
<u>Household Incomes (1981)</u>							
Less than \$12,000	13.4	18	5	5	11	1	2
\$12,000 - 14,999	6.1	9	6	4	5	1	5
\$15,000 - 24,999	23.4	33	26	15	14	16	15
\$25,000 - 49,999	33.4	28	42	50	41	36	56
\$50,000 - 74,999	17.0	8	16	18	26	32	19
\$75,000 - 99,999	4.0	1	3	7	2	9	2
\$100,000 Plus	2.7	3	2	1	1	5	1
<hr/>							
	No.	No.	No.	No.	No.	No.	No.
Persons Per Household	2.66	2.5	2.7	2.7	3.0	2.6	3.2
Children Per Household	0.55	0.4	0.8	0.7	1.0	0.4	1.0
Workers Per Household (d)	1.80	1.8	1.7	1.7	1.8	1.8	1.9
C-3 District Workers Per Household (d)	1.34	1.4	1.2	1.2	1.2	1.3	1.2

TABLE IV.D.3: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS AND HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981 (Continued)

NOTE: The information in this table is for C-3 District employees and is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The tabulations exclude building maintenance/security workers and construction workers since these groups were not included in the survey sample. The totals for tabulations shown here by place of residence may differ slightly from those tabulated by business activity in Section IV.C due to rounding or to slight differences in missing responses.

- (a) Includes responses from residents of Solano, Napa, Sonoma, and Santa Clara counties and from residents who live outside the nine-county Bay region. See note 9 for a description of the relative importance to the totals of responses from each county.
- (b) Percentages for the total workforce do not agree with those in the employment setting (Section IV.C and Table IV.C.7) because the figures in this table exclude construction and building maintenance/security workers. There also may be some differences in the occupations of the workforce as classified by the employees (this table) or by the employers (Table IV.C.7).
- (c) Spanish origin was a separate response from the ethnicity response reported above.
- (d) It is possible that these estimates may be slightly low since the survey question was confusing to some respondents. See note 8.

SOURCE: Recht Hausrath & Associates

tage represented by crafts, operatives, and other labor. These workers include many who are young, relatively inexperienced and unskilled, and who work in primary office activities. Generally, the C-3 District workers who live in the City are younger than average.

Among ethnic groups, workers living in the City include a proportionally large share of Asians, particularly among those in crafts, operatives, and sales occupations. Those who live in the City also include a larger than average share of individuals who were not born in the United States.

Most C-3 District workers who live in the City are in single person or unrelated individual households. San Francisco shows a strong attraction for workers in these types of households. The City attracts a relatively small share of couples with or without children. This pattern is reflected in the fact that among counties the average number of persons per household is the lowest for C-3 worker households living in San Francisco, the number of children per household is low, and the number of workers per household is relatively high. As would be expected, the average number of C-3 District workers in households with a C-3 District worker is highest in San Francisco./8/

Among household income groups, the workers who reside in San Francisco include greater shares of households with incomes under \$25,000 and of \$100,000 and above. Proportionally fewer City residents have incomes in the \$25,000 to \$100,000 range, particularly in the \$50,000 - \$100,000 group. Median incomes for worker households living in the City fall within the range of \$15,000 - \$24,999 while the medians for all other counties fall in the next higher range of \$25,000 - \$49,999.

Workers Residing In Other Counties

A number of characteristics differentiate those workers who reside in San Mateo County. A greater than average share are employed in business activities other than primary office, particularly in secondary office activities. A proportionally large share are managers and service workers and the largest number are clerical workers. They are generally older than the average. A very high percentage, over one-half, are foreign-born. Over 40 percent are Asian, with proportionally high representation among professional, managerial, and service workers. Nearly 15 percent are of Spanish origin, with high representation among professional, clerical, sales, and crafts/operatives occupations. Other ethnic groups are also highly represented.

Most C-3 District workers residing in San Mateo County live in couple households, and most of these have children. Thus the average house-

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hold size is high as is the number of children per household. Household incomes show higher than average shares in the \$25,000 to \$75,000 categories, particularly in the \$25,000 - \$49,999 group.

A high percentage of C-3 District workers residing in Alameda County are primary office workers. Over 40 percent are professional workers, the highest percentage of any county. Most fall in the 25-44 years of age categories. Of all the counties, blacks in Alameda County represent the highest share for this racial group. This relatively high share occurs in almost all occupations. C-3 District worker households include higher than average shares of all types of households except single person and unrelated individual households. Over one-half of the households are couples, and household sizes are about average. Proportionally large shares of worker households earn \$25,000 to \$100,000, particularly \$50,000 to \$75,000. Of the five counties with the most C-3 District workers, the average number of C-3 District workers per household is lowest for Alameda County, indicating the greater relative importance of jobs in that county by comparison to job opportunities in San Francisco.

Most of the C-3 District workers residing in Contra Costa County are primary office workers. Proportionally high shares are professionals and managers, particularly. Sales workers are also relatively well represented. Among counties, the average age for workers residing in Contra Costa is the oldest with a particularly large share in the 35-44 age group. Among racial groups whites represent a proportionally high share. Most households are couples with and without children. Household incomes are relatively high with larger than average shares of households with incomes in the \$25,000 - \$100,000 range, particularly for those in the \$75,000 - \$100,000 category.

Most C-3 District workers living in Marin County work in primary office activities and in professional and managerial jobs. One-third of the C-3 District workers living in Marin are managers, the highest share of all counties. Sales workers also represent a proportionally high share. Median age is higher than average since Marin has the largest share of

workers 45 to 54 and 55 years of age and older. There is less racial and ethnic mix in the C-3 workers living in Marin County as most are white. Among worker households in Marin, couples without children and unrelated individual households represent higher than average shares, particularly the former group (42 percent of all worker households in Marin). As a result, the average number of persons per household is low as is the number of children, while the number of workers per household is high. After San Francisco, the average number of C-3 District workers per worker household is higher in Marin than in any of the other counties reflecting the relative importance of San Francisco jobs compared to jobs in the county.

In addition to the five counties in which most C-3 workers live, a small share reside in the more outlying counties of the region. Of this group, about 40 percent reside in Solano County and most of the rest live in Sonoma or Santa Clara Counties (about 25 to 30 percent in each).^{9/} Nearly all those who commute from these counties work in primary office jobs and most are professional, managerial, and clerical workers. Most reside in couple households with children and a relatively large share are couple households without children. Among all counties, average household size is the largest for workers residing in these counties. Household incomes generally fall in the middle ranges with the majority having incomes from \$25,000 to \$49,999. The racial and ethnic mix of these workers largely reflects the characteristics of those residing in Solano County. For Solano, proportionally large shares of worker residents are Black, Asian, and of other non-white groups, and a large share are foreign-born (about one-half). The relatively large share of workers of Spanish origin includes primarily those in Solano and Sonoma Counties.

Housing Characteristics

The majority of C-3 District workers rent the housing in which they live (57 percent as shown in Table IV.D.4). Most live in multiple unit buildings (52 percent) or in single family dwellings (44 percent). Relatively few workers live in other types of housing (including mobile homes, residence hotels, and rooms in private homes).

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Housing characteristics for workers who reside in San Francisco differ from those for workers living in other Bay Area counties. In the City, nearly three-quarters are renters and most workers live in multiple unit buildings. In other counties, most workers are owners and most live in single family houses.

On the average, C-3 District workers have lived at their present residences for about six years./10/ Those who are renters move more often and averaged 4.1 years at their present residences when interviewed. For owners, the average was 8.4 years. Demographic characteristics are also important to turnover and are probably related to tenure. Generally, length of time at residence is longer as age and income increase.

Of interest is the higher than average number of years at present residence for the workers who live in San Francisco since they are primarily renters with lower than average ages and household incomes. The distribution of responses indicates relatively large numbers who moved within the last year and large numbers who have lived at their residence 10 or more years. The relatively large number in this latter group probably explains the high average. It also appears that many of the workers under 25 years of age live at home with parents. This factor could affect the average turnover for San Francisco since most of these younger workers (70 percent) live in the City and indicated that they lived at their residence for a relatively long time./11/

Amount Spent On Housing

A summary of the dollar amounts that C-3 District workers spend on housing is presented in Table IV.D.4. The amounts include rent or mortgage payments and, if paid by the occupant, utilities, property taxes, insurance, and home ownership fees. Overall, the median amount spent per month falls within the range of \$400 to \$599. Separate tabulations for owners and renters indicate generally higher monthly spending by owners (median in \$600 to \$799 range) than by renters (median in \$400 to \$599 range). Differences among counties in the amounts spent on housing (as shown in Table IV.D.4) are

TABLE IV.D.4: HOUSING CHARACTERISTICS FOR C-3 DISTRICT WORKER HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981

	Total C-3 Workforce %	Worker Households By County					
		San Francisco %	Alameda %	Contra Costa %	San Mateo %	Marin %	Other (a) %
<u>Tenure</u>							
Renter	57.2	74	41	24	38	34	16
Owner	42.8	26	59	76	62	66	84
<u>Type of Dwelling</u>							
Single Family Detached	31.5	12	51	66	59	60	72
Single Family Attached	12.0	14	6	9	12	12	12
Multiple Unit Building (b)	52.3	70	37	24	24	24	8
Other(c)	4.3	4	6	1	5	4	8
<u>Dollar Amount Spent On Housing Per Month(d)</u>							
Under \$200	1.4	1	2	3	small	4	small
\$200 - 399	20.3	24	19	11	13	13	19
\$400 - 599	38.9	46	31	35	23	22	18
\$600 - 799	15.0	14	18	15	19	17	19
\$800 - 999	7.3	5	8	10	8	20	17
\$1,000 - 1,249	7.4	4	12	14	15	3	10
\$1,250 - 1,499	3.5	2	3	7	7	4	8
\$1,500 Plus	6.2	4	7	5	15	17	9
<hr/>							
	No.	No.	No.	No.	No.	No.	No.
Average Number Of Household Members Paying For Housing	1.74	1.8	1.7	1.6	1.8	1.8	1.7
Average Number Years Residing At Present Residence(e)	6.09	6.5	4.9	5.9	5.0	7.5	5.9
Average Number Years Residing In Bay Area(f)	16.76	16.4	15.5	17.4	17.3	20.0	19.7

TABLE IV.D.4: HOUSING CHARACTERISTICS FOR C-3 DISTRICT
WORKER HOUSEHOLDS, BY COUNTY OF RESIDENCE,
1981 (Continued)

NOTE: The information in this table is for C-3 District employees and is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The tabulations exclude building maintenance/security workers and construction workers since these groups were not included in the survey sample.

- (a) Includes responses from residents of Solano, Napa, Sonoma, and Santa Clara counties and from residents who live outside the nine-county Bay region. See note 9 for a description of the relative importance to the totals of responses from each county.
- (b) Includes responses for 2-4 unit buildings (16.2 percent), 5-19 unit buildings (18.2 percent), and 20 plus unit buildings (17.9 percent). For the total workforce, these responses total 52.3 percent in multiple unit buildings.
- (c) Includes those living in mobile homes (0.4 percent), residence hotels (0.5 percent), rooms in private houses (1.5 percent), and other responses (1.9 percent) which often included living with extended family members. For the total workforce, these responses total 4.3 percent.
- (d) Includes rent or mortgage payments and, if paid by occupant, utilities, property taxes, insurance, and home ownership fees. The amounts shown here are current dollars at the time of the survey. Thus, they are early 1982 dollars.
- (e) For the total workforce, the median number of years at present residence is 3.3 years indicating the effect on the overall average of respondents who have lived at their present residence for many years. See note 10.
- (f) Excludes those residing outside the region. See note 10.

SOURCE: Recht Hausrath & Associates

influenced by the percentage of renters and owners. The explanation of the differences among counties lies in the financial and demographic characteristics of the households residing in each county and in their preferences for the housing (type, location, price/rent) available in each place.

For example, the larger share of San Francisco residents spending lower than average amounts on housing reflects the relatively lower incomes of many worker households who are City residents and the larger share of smaller, younger households in the City who probably occupy a less than average amount of space (many more in multiple unit buildings than in single family homes, for example). Separate tabulations for owners and renters indicate that for each group, worker households living in San Francisco include proportionally more households spending lower amounts on housing than does the group of worker households residing outside of San Francisco.

The average number of household members paying for housing is also shown in Table IV.D.4. These averages tend to be similar to but slightly lower than the average number of workers per household. The difference probably reflects older children living at home who do not pay for housing and secondary wage-earners and/or part-time workers whose incomes supplement household finances and are allocated for expenditures other than housing.

The relationship between amount spent on housing and household incomes is summarized for C-3 District worker households in Table IV.D.5. The table shows the distribution of owners and renters by income category according to the average percentages of income spent on housing./12/ For both renters and owners, the average percentages are larger for lower income households and the percentages decline as incomes increase. Generally, within an income category, owners spend a larger percent of income on housing than do renters./13/ Overall, the percentages of income spent on housing tend to range from 10 to 50 percent./14/

The group of worker households who own their housing include proportionally more households with higher incomes and more households who spend higher than average total dollar amounts on housing than does the group of renters. These higher dollar amounts represent lower than average percentages of income, however, since incomes are also higher. Thus, in the aggregate, the overall average percents of

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income spent on housing are lower for the group of owners than for the group of renters. This explains the observation from Table IV.D.5 that almost one-half of the owners spend 20 percent or less of their income for housing compared to a lower share of just over one-third for the group of renters in this category. It also explains the overall averages which indicate that worker households who are owners spend about one-quarter of their income for housing and that those who are renters spend about one-third of their incomes for housing./15/

The percentages in the table also indicate that for a given income group, there can be wide variation in the amount spent on housing. For example, of the renters with household incomes of \$15,000 to \$25,999, 37 percent spend 20 percent or less of their income on housing, 51 percent spend from 21 to 40 percent and 12 percent spend more than 40 percent. Similarly, for owners with household incomes of \$25,000 to \$49,999, 46 percent spend 20 percent or less for housing, 37 percent spend from 21 to 40 percent and 17 percent spend more than 40 percent. There are several reasons for this variation./16/

Households with similar incomes can have different financial abilities to pay for housing depending on equity in a prior residence or on other wealth (investments, pensions, inheritances) or debt (car loans, college loans, illnesses). They can also differ as to their willingness and ability to pay for housing because of demographic characteristics and housing preferences. Important demographic characteristics include household type (single person, married couple, group of unrelated individuals), presence of children, and age. For example, households with similar incomes but some with children and some without could have different abilities to pay for housing depending on the income needed for the children. Again holding income constant, younger households with increasing earning power and the need for tax shelter (few existing income tax deductions) are more likely to "stretch" their resources in the short term to purchase housing, while older households with declining earnings and decreasing needs for tax shelter are not. In addition to demographic and income characteristics, housing preferences are influenced greatly by lifestyle preferences and personal tastes. For

TABLE IV.D.5: SPENDING FOR HOUSING AS A PERCENTAGE OF HOUSEHOLD INCOME, DISTRIBUTED BY HOUSEHOLD INCOME CATEGORIES FOR C-3 DISTRICT WORKER HOUSEHOLDS, 1981

Percentage Distribution Of RENTERS With Household Incomes:	Percent of Household Income Spent On Housing				Percent Of Households By Income Category	Average Percent Of Income Spent On Housing
	0-20%	21%-40%	41%-60%	61+%		
Under \$12,000	--	20	75	5	21	57
\$12,000 - 14,999	1	36	48	15	10	40
\$15,000 - 24,999	37	51	11	1	39	27
\$25,000 - 49,999	59	40	1	--	23	19
\$50,000 - 74,999	95	5	--	--	5	{ 13
\$75,000 - 99,999	85	15	--	--	1	
\$100,000 - Above	100	--	--	--	1	
Total	35	37	25	3	100%	32%
<hr/>						
Percentage Distribution Of OWNERS With Household Incomes:	Percent of Household Income Spent On Housing				Percent Of Households By Income Category	Average Percent Of Income Spent On Housing
	0-20%	21%-40%	41%-60%	61+%		
Under \$12,000	--	41	15	44	2	{ 41
\$12,000 - 14,999	3	16	41	40	2	
\$15,000 - 24,999	37	13	35	15	10	
\$25,000 - 49,999	46	37	17	--	52	25
\$50,000 - 74,999	45	55	--	--	23	20
\$75,000 - 99,999	67	33	--	--	4	15
\$100,000 - Above	100	--	--	--	6	12
Total	48	36	13	3	100%	25%

TABLE IV.D.5: SPENDING FOR HOUSING AS A PERCENTAGE OF HOUSEHOLD INCOME, DISTRIBUTED BY
HOUSEHOLD INCOME CATEGORIES FOR C-3 DISTRICT WORKER HOUSEHOLDS, 1981
(Continued)

NOTE: The information in this table is derived from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The distributions and average percentages shown here are only approximate, order of magnitude average estimates. A number of assumptions were made to develop these estimates as described in note 12. The overall pattern identified here and summarized in the text is more accurate than any particular figure shown. Note 14 describes some of the possible sources of error, particularly for the higher percentages shown.

SOURCE: Recht Hausrath & Associates

example, how much households decide they can afford to pay for San Francisco housing often depends on the strength of their preferences for the types of housing and neighborhoods that the City has to offer. The investment potential of housing also influences the willingness of households to pay for housing, as do the prices of other goods and services.

A household's ability and willingness to pay for housing also depends on housing market factors. Interest rates determine the price of housing that a household can afford based on the financial resources allocated for mortgage payments. The housing choices (units and locations at various prices and rents) available also affect amount spent on housing. Within some range, households will spend more or less of their income on housing depending on what their resources will buy or rent.

Because spending for housing is determined within the context of housing market factors, the share of income spent for housing can change as housing market conditions change. Such changes have occurred since the mid-1970's because of a combination of national, regional, and local factors. Housing now costs more than it did relative to other household expenditures and to incomes. Therefore, a given amount of financial resources purchases less housing than had been the case, and as a result households generally spend a greater share of their resources on housing. Thus, the variation in housing spending within an income category as shown in Table IV.D.5, could partly reflect differences as a function of when the housing was purchased or rented.

Tabulations similar to those in Table IV.D.5 were done separately for households who moved in the last five years. For renters, about three-fourths had moved during this time. Comparison of the distribution of renter households according to the average percents of income spent on housing indicate a very similar pattern for those who moved recently and for all renter households. For renters, whether they moved in the last five years does not appear to have much effect on the percent of income spent on housing. This probably occurs

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because rents can increase over time for households who do not move. It may also be the case that many of those who move seek housing with similar rents since the cost of housing is a major factor to them./17/

For owners, however, there are significant differences in the percent of income spent on housing depending on whether the household moved in the past five years. The survey tabulations indicate that about one-half of the owners surveyed moved in the last five years. Within income categories, those who moved during this period are spending larger percentages of their income on housing. Housing spending of owners who moved in the past five years is summarized in Table IV.D.6 for comparison with the information about all owners in Table IV.D.5. Overall, the average share of income spent on housing for owners who moved in the past five years is 30 percent, compared to 25 percent for all owners. Since about one-half the owners moved in the past five years, the average percentage of income spent on housing is about 20 percent for the owners who purchased their housing more than five years ago. This situation reflects the fact that mortgage payments are set at the time of purchase and are often fixed over the term of the contract. Further, it reflects the fact that housing prices increased over the past five years.

It is important to note that the information on amount spent for housing is not a description of housing affordability as it is often defined. The data do not identify what a household with a given income should or could pay for housing; they describe what C-3 District worker households are now paying for housing. The information also provides an indication of how the spending for housing in the Bay Area appears to have changed in the recent past. However, this analysis of change only addresses the relationship between amount spent for housing and household incomes. It does not identify changes in the quality of housing services received for the dollars spent.

TABLE IV.D.6: C-3 DISTRICT WORKER HOUSEHOLDS WHO MOVED IN THE PAST FIVE YEARS AND WHO OWN THEIR HOUSING - SPENDING FOR HOUSING AS A PERCENTAGE OF HOUSEHOLD INCOME, DISTRIBUTED BY INCOME CATEGORIES, 1981

	Percent of Household Income Spent On Housing				Percent Of Households By Income Category %	Average Percent Of Income Spent On Housing %
	0-20%	21%-40%	41%-60%	61+%		
Percentage Distribution Of OWNERS Who Moved in Past Five Years with Household Incomes:						
Under \$12,000	--	23	8	69	100%	{ 45
\$12,000 - 14,999	1	13	58	29	100%	
\$15,000 - 24,999	26	8	53	13	100%	10
\$25,000 - 49,999	19	56	25	--	100%	51
\$50,000 - 74,999	32	68	--	--	100%	30
\$75,000 - 99,999	57	43	--	--	100%	6
\$100,000 - Above	100	--	--	--	100%	1
Total	26	52	20	2	100%	30%

NOTE: The information in this table is derived from the Downtown EIR Employee Survey as described in Table IV.D.5. This table is presented for comparison with the information in the previous table for all C-3 District households who are owners including those who moved in the past five years (and described by the figures above). Those who moved during this period represented about half (49 percent) of all C-3 District households who are owners. Similar data is not presented for renters who moved in the past five years since their housing expenditures appear to be similar to all renters as described in Table IV.D.5 and discussed in the text.

SOURCE: Recht Hausrath & Associates

San Francisco Residents

Residence Patterns Within San Francisco

As previously described, more than one-half of the C-3 District workforce resides in San Francisco (56.8 percent). These workers live in neighborhoods throughout the City as summarized in Table IV.D.7. When the City is divided into quadrants, the largest numbers of workers live in the southwestern and northwestern areas of the City (see map in Figure 11.C.2). Of those residing in the City, about 70 percent live in these western areas. The remaining 30 percent splits between the northeastern and southeastern quadrants of the City. Among the 15 study districts, those with the largest number of C-3 workers include the Central, Richmond, Marina, Northeast, and Outer Sunset districts. Together, these five districts house 65 percent of the C-3 workers who live in the City.

City residence patterns for workers employed in business activities of various types are identified in Table IV.D.8. Unlike the other activities, most hotel workers live on the east side of the City (about 70 percent). The largest numbers of hotel workers live in the Downtown, South Central, and Western Addition districts, which do not house very large shares of workers in other business activities. The residence patterns of secondary office and retail workers are fairly similar. Most live in the southwest and a relatively large share also reside in the northwest. The largest number of workers in each of these activities lives in the Central and Richmond districts.

About two-thirds of the primary office workers live in the western portions of the City and about one-third in the eastern areas. The largest number, nearly 20 percent, live in the Marina district, followed by relatively large numbers of workers living in the Central, Richmond, and Northeast districts. The relatively small number of workers in the cultural/institutional/educational group split between the eastern and western sections of the City with the largest numbers living in the southwest and the northeast.

TABLE IV.D.7: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES, 1981

City Study Areas(a)	Distribution of C-3 District Employees Who Are City Residents	
	Number	Percent
Southeast	21,390	14.6%
1 Potrero	2,200	2
2 South Bayshore	1,500	1
3 South Central	9,700	7
4 Bernal Heights	1,800	1
5 Mission	6,200	4
Southwest	57,570	39.3%
6 Central(b)	30,200	21
7 Ingleside	5,000	3
8 Outer Sunset	12,200	8
9 Inner Sunset	3,500	2
10 Buena Vista	6,700	5
Northwest	46,700	31.9%
11 Western Addition	6,700	5
12 Richmond	21,200	14
13 Marina	18,800	13
Northeast	20,910	14.2%
14 Northeast	12,900	9
15 Downtown	8,000	5
Total	146,570	100%
Estimated Building Maintenance/Security and Construction Workers Not Allocated within the City(c)	7,100	
TOTAL	153,670	

NOTE: Residence patterns are tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The estimates for the four quadrants of the City are more accurate than the estimates for the 15 individual districts. For comparison, Table IV.D.1 identifies the percentage of the total C-3 District workforce represented by those who live in San Francisco.

TABLE IV.D.7: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR
C-3 DISTRICT EMPLOYEES, 1981 (Continued)

- (a) See Figure II.C.2 for a map of the City Study Areas.
- (b) The estimate for the Central district may be high. If so, the difference may occur in the Richmond district, which may be low. If these adjustments were made, the totals for the southwest and northwest quadrants would be more similar than shown here.
- (c) Building maintenance/security and construction workers were not included in the survey sample. Thus, information about City residence patterns is not available. The estimate of the number who live in the City assumes that the average percentage of C-3 District workers residing in the City (56.8 percent) applies to workers in these activities. As discussed previously in the text, the share of construction workers living in the City is probably lower than this average while the percentage for building maintenance/security workers is probably higher than average. For certain purposes, it may not be appropriate to include the construction workers currently employed on projects in the C-3 District in the figures for C-3 District workers living in San Francisco since, at other times, some of these workers may be employed on projects outside the C-3 District.

SOURCE: Recht Hausrath & Associates

TABLE IV.D.8: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES WHO ARE CITY RESIDENTS, BY BUSINESS ACTIVITY, 1981

City Study Areas(a)	Total C-3 District Workers Who Live In San Francisco %	Workers Who Are City Residents, By Business Activity				Cultural/ Institutional/ Educational %
		Primary Office %	Secondary Office %	Retail %	Hotel %	
Southeast	14.6	17	5	11	32	12
Southwest(b)	39.3	33	70	59	14	39
Northwest	31.9	35	20	21	18	18
Northeast	14.2	15	5	9	36	31
Total: Percent Number	100.0% 146,570(c)	100% 84,310	100% 22,570	100% 17,130	100% 10,950	100% 5,910
City Districts With Largest Number Of C-3 District Workers(d)						
	<ul style="list-style-type: none"> Central Richmond Marina Northeast Outer Sunset 	<ul style="list-style-type: none"> Marina Central Richmond Outer Sunset Northeast 	<ul style="list-style-type: none"> Central Richmond Outer Sunset Marina Ingleside 	<ul style="list-style-type: none"> Central Richmond Buena Vista Mission Outer Sunset 	<ul style="list-style-type: none"> Downtown South Central Western Addition Northeast Mission 	<ul style="list-style-type: none"> Central Northeast Richmond Downtown Western Addition

TABLE IV.D.8: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES WHO ARE CITY RESIDENTS, BY BUSINESS ACTIVITY, 1981 (Continued)

NOTE: The information in this table is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the secondary office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not shown separately here for workers in the industrial group because of the small number of responses received. Table IV.D.2 identifies the share of total C-3 District workers in each business activity that are represented by those who live in San Francisco.

- (a) See Figure II.C.2 for a map of the City Study Areas and Districts.
- (b) The estimate for secondary office workers in the southwestern part of the City may be high. If so, more of these workers would live in other areas of the City, particularly the northwest.
- (c) This total includes 5,700 workers in industrial/warehouse/automotive/parking activities whose residence patterns are not shown separately. Most are included in the northwest quadrant. This total does not include building maintenance/security and construction workers since information on their residence patterns within the City is not available.
- (d) The five City districts with the most C-3 District workers are listed in order, starting with the district with the most workers. See Figure II.C.2 for a map of the City Districts.

SOURCE: Recht Hausrath & Associates

Citywide Perspective on San Francisco Employment and Employed Residents

Review of C-3 District information within the context of citywide data provides perspective on the role of the C-3 District in employing San Francisco's residents. The top portion of Table IV.D.9 summarizes the relevant available information about employment and population. The rest of the table uses this data for summaries from two perspectives: (1) San Francisco employment, in terms of the share of jobs held by City residents; and (2) San Francisco population, in terms of the share of residents who work in the City. Review of this information indicates that:

From Employment Perspective:

- About one-half of the jobs in San Francisco are held by City residents;
- More than one-half of the jobs in the C-3 District are held by residents;
- The percentage of C-3 District jobs held by City residents is higher than the percentage of other San Francisco jobs (outside the C-3 District) held by City residents; /18/ and
- The percentage of C-3 District primary office jobs held by City residents is lower than the percentage of all other San Francisco jobs held by residents.

From Resident's Perspective:

- Most employed San Franciscans work in San Francisco, about 86 percent;
- About 45 percent of employed San Franciscans work in the C-3 District. This group represents about one-half of all employed residents who work in the City; and
- About one-quarter of employed San Franciscans hold C-3 District primary office jobs, about 20 percent hold other types of jobs in the C-3 District, and about 40 percent work in jobs located elsewhere in the City. The remaining 14 percent work outside of the City.

TABLE IV.D.9: PERSPECTIVES ON EMPLOYMENT AND EMPLOYED RESIDENTS IN SAN FRANCISCO, 1981

<u>Relevant Information</u>	<u>1980</u>	<u>1981</u>
San Francisco Employment(a)	578,600	589,300
San Francisco Employed Residents(b)	342,484	345,360
San Francisco Employed Residents Who Work in the City(b)	293,166	295,630
C-3 District Employment(c)	N.A.	270,370
C-3 District Workers Who Live in San Francisco(d)	N.A.	153,670
C-3 District Primary Office Employment(c)	N.A.	172,550
C-3 District Primary Office Workers Who Live in San Francisco(e)	N.A.	84,310

Employment Perspective: Jobs Held By Residents

Percentage of San Francisco Jobs Held By City Residents	50.2%
Percentage of C-3 District Jobs Held By City Residents	56.8%
Percentage of City Jobs Outside C-3 District Held By City Residents	44.5%
Percentage of C-3 District Primary Office Jobs Held By City Residents	48.9%
Percentage of All Other City Jobs Held By City Residents	50.8%

Resident's Perspective: Residents Who Work In The City

Percentage of Employed Residents Who:	
- Work in San Francisco	85.6%
- Work Outside San Francisco	14.4%
Percentage of Employed Residents Who:	
- Work In C-3 District(f)	44.5%
- Work Elsewhere in San Francisco	41.1%
- Work Outside San Francisco	14.4%

TABLE IV.D.9: PERSPECTIVES ON EMPLOYMENT AND EMPLOYED RESIDENTS IN SAN FRANCISCO, 1981 (Continued)

Resident's Perspective: Residents Who Work In The City (cont'd) 1981	
Percentage of Employed Residents Who:	
- Work In C-3 District Primary Office Jobs(g)	24.4%
- Work In Other C-3 District Jobs	20.1%
- Work Elsewhere in San Francisco	41.1%
- Work Outside San Francisco	14.4%

NOTE: The percentages shown here are all derived from the relevant information presented in the first part of the table.

- (a) California Employment Development Department (EDD) figures plus 25,000 self-employed workers (see Table IV.C.4).
- (b) 1980 Census, STF-3 as tabulated by California State Census Data Center. 1981 estimates by Recht Hausrath & Associates per methodology used for forecasts of residence patterns as explained in Section V.D, and in Appendix I.
- (c) See Table IV.C.1.
- (d) See Table IV.D.7.
- (e) See Table IV.D.8. Total includes only primary office workers and does not include maintenance/security personnel working in office buildings or construction workers on office building projects.
- (f) If construction labor working on projects in the C-3 District in 1981 is not included with permanent C-3 District workers, the share of employed City residents working in the C-3 District is 43.3 percent. The percentages for those working elsewhere in the City or outside the City would be increased to include these workers depending on where they are counted.
- (g) The percentage of employed residents who work in all C-3 District office jobs (primary and secondary office) is 30.9 percent.

SOURCE: Recht Hausrath & Associates

It is important to understand the difference between the two perspectives highlighted above in the text and in Table IV.D.9. Based on the same number of employed residents, it is possible to calculate the percentage of City jobs held by residents and the percentage of

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employed residents who work in the City. These percentages are different because the number of jobs is larger than the number of employed residents. However, these percentages both describe the same situation, but from different perspectives. The percentage of jobs held by City residents (and by residents of other Bay Area counties) is used more often, primarily for transportation analysis. The percentage of City residents who work in San Francisco is used less often. This latter perspective is a more direct measure of the role of jobs in the City or in the C-3 District in employing San Francisco's residents.

Further information about the role of employment in the C-3 District is provided through comparison of the characteristics of C-3 District workers with those of all City residents, as shown in Table IV.D.10./19/ Generally, compared to City residents overall, those employed in the C-3 District are younger, include proportionally more Asians and Whites and fewer Blacks and persons of other races, include relatively fewer persons of Spanish origin, and have a similar mix of sexes. Among quadrants of the City, proportionally more C-3 District workers live in the southwestern and northwestern areas, relatively fewer live in the southeast, and a similar share resides in the northeast. Generally, C-3 District households include a larger share of renters, probably related to the younger age distribution of the employed group.

The differences in household composition are initially surprising. Relatively fewer of those who work in the C-3 District reside in households of single persons or of couples without children, and larger shares reside in households of other types. The main reason appears to be that, for the total City, there is a substantial share of senior citizen households who are not employed. For example, the 1980 Census indicates that 22.5 percent of San Francisco's households have householders who are over 65 years of age. These tend to be single individuals or older couples without children living at home./20/ There also may be other households (non-senior citizens) with no employed persons.

TABLE IV.D.10: DEMOGRAPHIC CHARACTERISTICS FOR CITY RESIDENTS WORKING IN THE C-3 DISTRICT AND FOR ALL SAN FRANCISCO RESIDENTS

	All San Francisco Residents, 1980 %	San Francisco Residents Working In C-3 District, 1981 %
<u>Sex</u>		
Female	50.2	50.6
Male	49.8	49.4
<u>Race/Ethnicity</u>		
White	58.2	61.2
Black	12.7	4.8
Asian	21.3(a)	29.4
Other	7.8	4.6
Spanish Origin	12.3	6.6
<u>Median Age (yrs.)</u>	34.1 yrs.	31.8 yrs.
<u>Tenure</u>		
Owners	33.7	26.3
Renters	66.3	73.7
<u>Location Within San Francisco</u>		
Southeast	27.2	14.6
Southwest	34.4	39.3
Northwest	23.7	31.9
Northeast	14.7	14.2
<u>Household Composition</u>		
Single Person	41.4	30.2
Couple-No Children	21.1	11.6
Couple-Children	13.3	19.7
Single Parent	5.8	11.0
Other(b)	18.4	27.5

TABLE IV.D.10: DEMOGRAPHIC CHARACTERISTICS FOR CITY RESIDENTS WORKING IN THE C-3 DISTRICT AND FOR ALL SAN FRANCISCO RESIDENTS (Continued)

	All San Francisco Residents, 1980 %	San Francisco Residents Working In C-3 District, 1981 %
Household Income	(1979 Income)	(1981 Income)
Less than \$15,000	47.5	27.0
\$15,000 - 24,999	24.5	32.5
\$25,000 - 49,999	22.2	28.5
\$50,000 - 79,999	3.9	7.7
\$75,000 or more	1.9	4.3

	No.	No.
Persons Per Household	2.19	2.54
Persons Under 18 yrs. Per Household	0.39	0.39
Workers Per Household	1.15 employed persons 1.22 labor force members	1.83

NOTE: The two data sources above can be generally compared although they are not for the same years. The 1980 Census data are from tabulations of files STF-1 and STF-3 prepared by the California State Census Data Center. The 1981 data for C-3 District workers residing in San Francisco are tabulated from the Downtown EIR Employee Survey. It should be noted that the C-3 District data are for workers and households with workers whereas the citywide data are for all residents (employed and not employed) and for all households (with workers and with no workers).

(a) Includes Japanese, Chinese, Filipino, Korean, Asian Indian, and Vietnamese.

(b) Includes unrelated individuals and other households.

SOURCE: Recht Hausrath & Associates

The substantial share of City households without any workers is highlighted by the finding that while residents working in the C-3 District represent about 45 percent of all employed City residents (see Table IV.D.9), the households of City residents working in the C-3 District represent about 36 percent of all San Francisco households./21/ The percent of households is lower than the percent of employed residents because of the number of City households with no workers. It could also be the case that there are more workers in households with C-3 District workers than in all City households with workers.

Related to the differences in household composition, C-3 District worker households have a larger average number of persons per household than does the City overall. Households with C-3 District workers also have a higher average number of workers per household, about 50 percent higher than the overall City average. This difference probably reflects two factors. One is that the City overall includes a substantial share of households without any workers so that the number of workers in all households with workers is higher than the citywide average. This is the most important factor. Second, households with C-3 District workers could have a higher average number of workers per household than worker households overall.

C-3 District worker households and all City households are similar in the average number of children per household. Because of the large share of senior citizen households in the citywide figures it is probable that among all households with children, those with C-3 District workers tend to have fewer children per household on the average.

Consistent with the higher average number of workers per household the distribution of C-3 District worker households among household income categories indicates larger percentages in the higher income groups as compared to the distribution for the City overall.

C-3 DISTRICT 1984 SETTING

Analysis of demographic and housing market factors produced forecasts of future residence patterns for C-3 District workers. Analysis done for the 1981 to 1990 period provided estimates for 1984. These are shown in Table IV.D.11./22/

In comparison to 1981, growth is expected in the number of workers residing in every county. Overall residence patterns for 1984, as reflected by the percentage distribution of the workforce among counties, are very similar to the 1981 patterns. The overall average percentage of workers residing in the City is forecast to decline slightly while the percentages for the other parts of the region are forecast to increase. The largest increase in numbers of workers would be for those residing in the east bay, followed by the increase in San Francisco residents, in south bay residents, and then by those living in the north bay. This changing pattern reflects both the characteristics of the jobs which are growing in the C-3 District and changing demographic and housing market factors throughout the region.

Within San Francisco, increases are forecast for the number of C-3 District workers residing in each of the four quadrants of the City. The distribution of workers among quadrants is expected to shift slightly with proportionally more growth in the eastern parts of the City. Thus, there would be slight increases in the percentages of City residents living in the southeastern and northeastern areas. With construction and building maintenance/security workers included, the 153,670 residents working in the C-3 District in 1981 (see Table IV.D.7) would increase to 158,780 residents in 1984, an increase of about 5,100 workers and a change of 3.3 percent.

TABLE IV.D.11: RESIDENCE PATTERNS FOR C-3 DISTRICT EMPLOYEES, 1984

<u>County of Residence</u>	<u>Distribution of C-3 District Employees</u>			
	<u>Number</u>	<u>Percent of Total</u>	<u>Number</u>	<u>Percent of County</u>
San Francisco	152,600	55.5%		
Southeast			22,410	15
Southwest			59,910	39
Northwest			48,300	32
Northeast			21,980	14
East Bay	72,340	25.6%		
Alameda	36,220	13.2		
Western			33,760	93
Eastern			2,460	7
Contra Costa	30,700	11.2		
Western			5,600	18
Eastern			25,100	82
Solano/Napa	3,420	1.2		
South Bay	33,250	12.1%		
San Mateo	31,490	11.5		
Western			12,330	39
Eastern			19,160	61
Santa Clara	1,760	0.6		
North Bay	18,750	6.8%		
Marin	16,920	6.1		
Sonoma	1,830	0.7		
Other	150	small		
TOTAL	275,090	100.0%		

NOTE: Based on demographic and housing analyses described in Section V.D, Housing Impacts and in Appendix I. The totals shown here exclude building maintenance/security and construction workers (11,050 in 1984). As explained in the text for 1981, it is possible to approximate the residence patterns of these workers by using the average percentages for all other workers shown above.

SOURCE: Recht Hausrath & Associates

NOTES - Residence Patterns and Housing for C-3 District Workers

- /1/ See Appendix F for description of the survey methodology.
- /2/ Although the percentage of primary office workers residing in San Francisco is the lowest among the business activities, the number of primary office workers residing in the City (84,310) is the highest and represents 57 percent of all C-3 workers who are San Francisco residents. The reason is that the total number of primary office workers is larger than the number of workers in any other business activity and larger than the total employment for all other business activities combined.
- /3/ Residence patterns are not separately identified for industrial/warehouse/automotive/parking workers because of the small number of survey responses received for this group. Of the responses, about 80 percent lived in San Francisco and 20 percent in San Mateo County. While this indicates that many of these workers live in these two counties, it is likely that smaller numbers live in other Bay Area counties as well.

These findings do not necessarily imply that most workers in all industrial type businesses live in San Francisco. For example, this does not appear to be the case for workers employed in industrial activities south of Market/Folsom Streets outside the C-3 District. (See note 6 below.) The results of a similar survey in this area indicate that 45.5 percent of workers in sales/distribution/wholesale businesses reside in San Francisco and that 27.3 percent of workers in manufacturing businesses live in the City. The percentage of workers residing in San Francisco is lower for manufacturing businesses than for any of the other categories of business activities surveyed in the C-3 District or in the area south of Market/Folsom Streets.

Since the C-3 District survey included relatively few workers in industrial type businesses, the sample size could have affected the results. Beyond that, however, there are differences in the industrial activities and types of workers in each group surveyed (C-3 District and south of Market/Folsom). Generally the C-3 District workers in the industrial/warehouse/automotive/parking group appear to include more less skilled, younger, non-family, and less career-oriented workers, many of whom reside in San Francisco. The south of Market/Folsom industrial activities are much more major facilities with on-site managers, proportionally more skilled crafts workers, on-site administrative functions, and generally an older workforce with more family households, generally favoring non-San Francisco locations. More analysis of the south of Market/ Folsom survey results is required to verify and further describe this pattern.

- /4/ Mr. S. Smith, San Francisco Building and Construction Trades Council, personal conversation, October 27, 1982.

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

- /5/ Since construction workers have a lower than average percentage of City residents and building maintenance/security workers have a higher than average percentage, it is reasonable to use the average pattern for all of the surveyed workers in the C-3 District to develop an estimate of the total number of workers residing in San Francisco. It is also possible to use the overall survey percentages for estimating the workers in these two groups who live in the other counties of the region. Any error introduced by this procedure would be small since the number of workers in these two categories represented only about five percent of those employed in the C-3 District in 1981.
- /6/ A survey similar to the Downtown EIR Employee Survey was conducted for the Department of City Planning by Recht Hausrath & Associates in October and November, 1982 in the area bounded by Folsom, Ninth, Berry, and Embarcadero Streets. A map of this survey area is included at the end of Appendix I. This south of Market/Folsom Survey used a methodology similar to that of the Downtown EIR Survey and the same questionnaire. Since the main purpose of this second survey was to develop transportation information, detailed analysis of residence patterns and workforce characteristics has not yet been done. The references to the south of Market/Folsom Survey made in this study are based on only selected tabulations of the survey data.
- /7/ The percentage figures in Table IV.D.3 can be viewed in two ways. One is to identify the percentage of workers or households residing in a particular county who possess certain characteristics. For example, the table shows that 57 percent of the C-3 District workers residing in San Francisco are primary office workers. Another perspective is to compare the percentages for individual characteristics across counties and with the average percents for the total C-3 District workforce. This comparison highlights the differences in characteristics among residents of different counties. For example, the percentage that primary office workers represent of the workers residing in each county is lower than average in San Francisco and San Mateo Counties (57 and 59 percent compared to 67 percent overall) and higher in all other counties (from 84 to 96 percent.) Since the purpose of the text is to highlight the differences in characteristics by place of residence, this second perspective is the most relevant. References to proportionally or relatively larger or smaller shares mean that a county has a greater or lower than average percentage of workers with certain characteristics.
- /8/ The survey estimates of workers per household and of C-3 District workers per household may be slightly low since the survey questions were confusing to some respondents. The survey asked "counting yourself, how many.....". The responses indicate that

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

some respondents did not count themselves. Since responses of zero are not possible, the zeros could be changed to 1. It is uncertain, however, if the response should have been more than 1 or if responses of 1 or 2 should have been higher. This factor is unlikely to significantly affect the averages, however.

- /9/ As shown in Table IV.D.1, about 6,300 workers reside in Solano, Napa, Sonoma, and Santa Clara counties and in counties outside the Bay region. Of these about 43 percent reside in Solano, 27 percent each in Sonoma and Santa Clara, and the remaining three percent in Napa and outside the region. In total, workers residing in these counties represent a small share of the C-3 District workforce (about 2.5 percent).

- /10/ The survey responses do not indicate the total length of time that respondents will live at their present residences (or will reside in the Bay Area). Rather, they indicate the length of time that respondents had lived at their present residences when interviewed. On the average, the responses should indicate about one-half of the total length of time that respondents will live at their present residences. Thus, the responses should be doubled to estimate the average total number of years.

- /11/ Workers under 25 years of age represent 12.3 percent of the C-3 District workforce, and 69.6 percent of these younger workers live in San Francisco. (They represent 15.1 percent of City residents working in the C-3.) Nearly half of these younger City residents (47.4 percent) said they had lived at their present residence for 10 years or more. (About 55 percent said they had lived at their residence 5 years or more.) Most of these workers also indicated that they were in households of single parents or couples with children and in owner-occupied housing.

- /12/ As noted in Table IV.D.5, the percent of income figures are only approximate, order of magnitude estimates that are useful in describing the overall pattern. They were derived by comparing the responses to two separate survey questions: annual household income (before tax for 1981) and amount spent per month on housing (current amount at time of survey in 1982). Since the responses to each question indicate the category within which the income or housing amount falls, the percentage of income spent on housing for each respondent also falls within a range and is not a single number. The distributions in Table IV.D.5 were derived by assuming the midpoint for each range. For example, for a household with annual income in the category \$15,000 - 24,999 and spending for housing of \$400 - 599 per month, the percent of income spent on housing could be in the range of 19 percent ($\$400 \times 12 \text{ months} / \$24,999$) and 48 percent ($\$599 \times 12 \text{ months} / \$15,000$). Using midpoints, the response was recorded as 30 percent ($\$500 \times 12 \text{ months} / \$20,000$). In some cases, the re-

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

sponse categories were open-ended such as for incomes of \$100,000 and above. To estimate percentages for these categories the following assumptions were made: incomes of less than \$12,000 were assumed to be \$10,000; incomes of \$100,000 or more were assumed at \$120,000; spending on housing of under \$200 per month was assumed at \$175; and spending on housing of \$1,500 or more per month was assumed at \$1,650. Alternate assumptions could be made although they are unlikely to materially affect the results. In some cases, the responses indicated that amount spent on housing was 100 percent or more of household income. These responses were not included in the summary tabulations in Table IV.D.5.

- /13/ The percentages are not entirely comparable for owners and renters since there may be income tax advantages to owners which reduce the after-tax cost of housing for owners.
- /14/ As shown in Table IV.D.5, about 3 percent of the respondents indicated that they spend 60 percent or more of their household income on housing. These respondents fall in the lower income categories. In combination with the other information, these responses support the conclusion that those with lower incomes spend the largest percentages of income on housing. Yet it is unlikely that these higher percentages (60 percent or more) are realistic amounts. Since many of those with lower incomes might share housing with roommates or family members, it is possible that their responses to the questions about income and amount spent on housing were not both consistent with respect to figures for the total household. Instead, one response might have included the income of only one household member, for example. It is also possible that the respondent did not have accurate information about household income and spending, which could be the case for those living with parents or other family members, particularly. As noted previously, a large share of workers under 25 years of age appear to live at home with parents and many indicated that their housing was owned. In addition, the use of midpoints in estimating the distributions in Table IV.D.5 (see note 12) could have also contributed to over-estimates of percent of income spent on housing if more of the respondents had lower than average percentages.
- /15/ It should be noted that for owners, the percentages discussed are percentages of household income spent for housing payments and expenses of the types identified. They are not ratios of income to housing prices. The price of housing that could be amortized by the payments identified depends on interest rates for financing and the amount of downpayment or equity invested.

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

- /16/ For a more thorough discussion of the factors which affect the amount spent on housing see Recht Hausrath & Associates, The Feasibility of Performing A Housing Affordability Analysis Relevant to Office Growth in Downtown San Francisco, July 1982, pages 15-21. A copy is on file at the Department of City Planning, 450 McAllister Street, San Francisco.
- /17/ Since renters include proportionally more households with lower incomes, they may have more difficulty increasing the share of income spent for housing as rents rise. Thus, when many renters move they may be more likely to accept a lower quality of housing in order to maintain a manageable monthly rent. The analysis summarized here only addresses the relationship between the amount spent on housing and household incomes. It does not identify changes in the quality of housing services received.
- /18/ While some of the percentages shown in Table IV.D.9 are approximate since they result from the combination of information from several sources (Census, EDD, C-3 District Survey and analysis in this study) the patterns they indicate are more accurate. The finding that the percentage of C-3 District jobs held by City residents is higher than the percentage of other San Francisco jobs held by City residents was partly confirmed by the recent south of Market/Folsom survey (see note 6). The results of that survey indicate that 44.5 percent of the workers in the south of Market/Folsom area live in the City in comparison to 56.8 percent of C-3 District workers who live in the City.
- /19/ As noted in Table IV.D.10, the data for the C-3 District and for the City are not entirely comparable. The most important difference is that the C-3 District data are for workers and households with workers whereas the citywide data is for all residents (employed and not employed) and for all households (with workers and with no workers). Thus, differences between the groups could reflect differences among those who work and those who do not work as well as differences in the characteristics of workers or of households with workers. Another difference is that the citywide data are for 1980 and the C-3 District information is for 1981. This difference should not significantly affect overall comparability.
- /20/ The 1980 Census data shows the following relevant to the percentage of households that may not have employed persons because they are retired, senior citizens: 25.8 percent of the City's households have persons over 65 years of age; 22.5 percent of the City's households have householders who are over 65 years of age; and 28.5 percent of single person households in the City are over 65 years of age. (1980 Census, STF-1 as tabulated by the California State Census Data Center.)

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

- /21/ Other comparisons indicate the following regarding the percentage of City households with C-3 District workers in 1981: City households with C-3 District workers represent 36.6 percent of all City households; City households with C-3 District primary office workers represent about 20 percent of all City households; office workers (holding primary and secondary office jobs) represent about 25 percent of all City households. These estimates assume 1.4 C-3 workers per San Francisco household with C-3 workers (see Table IV.D.3) and 299,960 households in San Francisco in 1981 (Recht Hausrath & Associates estimate).
- /22/ Forecasts of future residence patterns included consideration of the relationship between employment growth and housing markets and of changing demographic and housing market factors. These are discussed in Section V.D. Housing Impacts and in Appendix I. Much more information on changing residence patterns and trends is provided in the housing impact section.

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C-3 DISTRICT BACKGROUND

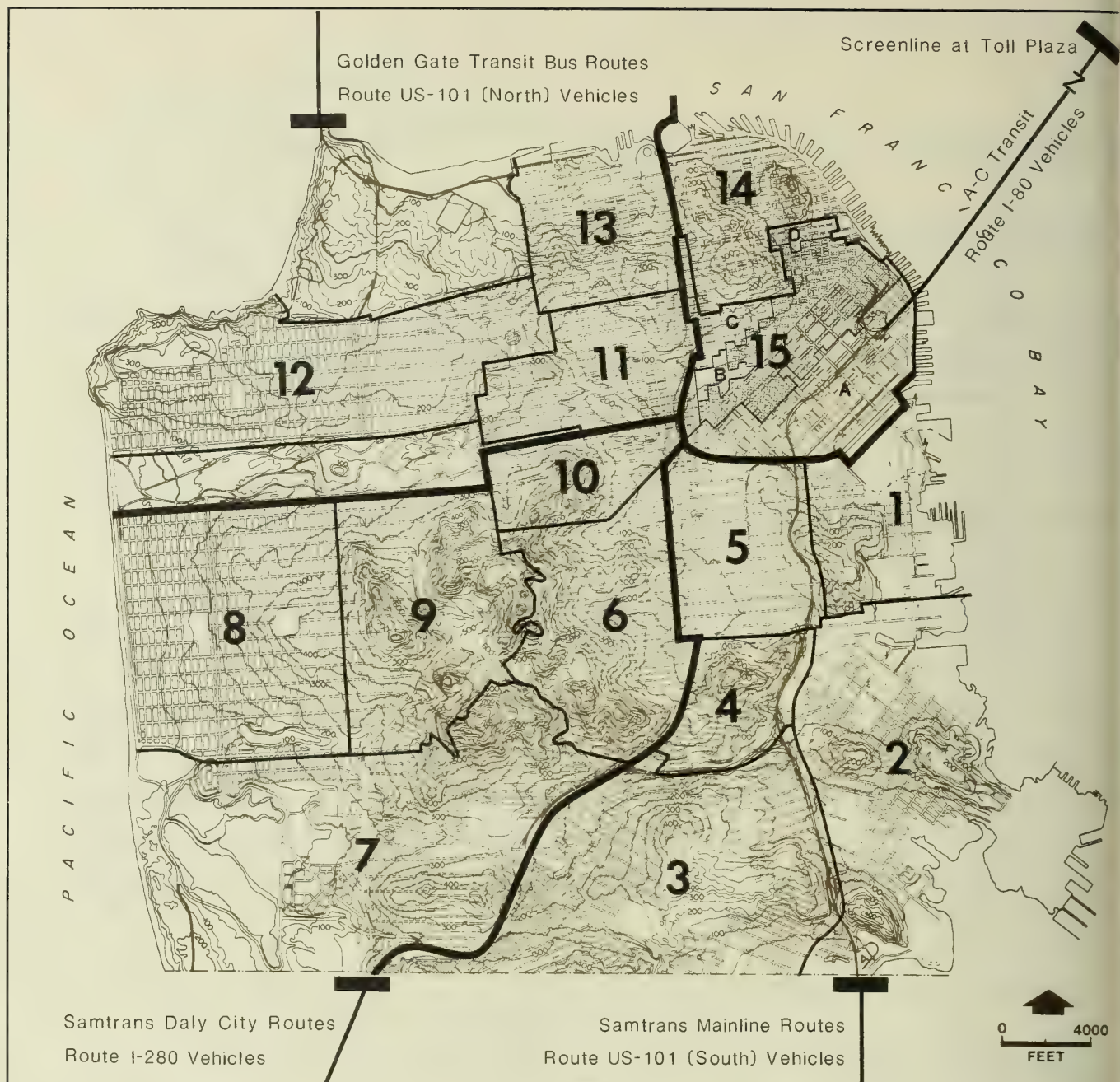
San Francisco's C-3 District is the hub of the regional transportation network. Public transit services directly link the C-3 District with residential and commercial centers in seven of the nine Bay Area counties (Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Sonoma Counties). Napa and Solano Counties, although lacking direct transit service to the C-3 District, are linked to the C-3 District by the regional freeway and bridge system that provides vehicle access to all nine Bay Area counties.

The C-3 District attracts travel from the entire region. Residence locations for C-3 District employees (shown in Table IV.D.1, p. IV.D.2) indicate the regional characteristics of commute travel to and from the C-3 District. Over 40 percent of the daily C-3 District employee travel is made to and from locations outside San Francisco. In addition to employee travel, the C-3 District attracts travel to retail areas, to business offices and services, and to hotels and residences. Service and delivery vehicles operate throughout the C-3 District each day. Persons traveling to and from other locations in San Francisco, the East Bay, the North Bay and the southern Peninsula share the regional transportation network with C-3 District travelers.

C-3 DISTRICT 1984 SETTING

Transportation Network

The C-3 District is served by four major multi-lane freeways. Interstate I-80 via the San Francisco-Oakland Bay Bridge provides access to the East Bay; US-101 via the Golden Gate Bridge provides access to the North Bay; and US-101 and Interstate-280 provide access to the Southern Peninsula (see Figure IV.E.1, p. IV.E.2). California State Route (SR)-480, the Embaracadero Freeway, serves the C-3 District as a distribution structure for traffic on I-80 and US-101 and provides the only direct freeway ramp connections with the C-3 District. Freeway ramps connecting with I-80, US-101 and I-280 are located south of the C-3 District and are accessible from local streets. Access to US-101 to the north is also available from local streets.



SOUTHEAST STUDY AREA

- 1 Potrero Study District
- 2 South Bayshore Study District
- 3 South Central Study District
- 4 Bernal Heights Study District
- 5 Mission Study District

SOUTHWEST STUDY AREA

- 6 Central Study District
- 7 Ingleside Study District
- 8 Outer Sunset Study District
- 9 Inner Sunset Study District
- 10 Buena Vista Study District

NORTHWEST STUDY AREA

- 11 Western Addition Study District
- 12 Richmond Study District
- 13 Marina Study District

NORTHEAST STUDY AREA

- 14 Northeast Study District
- 15 Downtown Study District

Primary Study Area: See FIGURE II.C.1

Secondary Study Area

- A Outer South of Market Subarea
- B Civic Center Subarea
- C Van Ness Corridor / Polk Gulch Subarea
- D Jackson Square Subarea

SCREENLINE

FIGURE IV.E.1:

SAN FRANCISCO TRANSPORTATION STUDY AREAS AND REGIONAL SCREENLINES

SOURCE: Environmental Science Associates, Inc.

IV. Environmental Setting

Regional traffic access to the north and to the east is limited to the Golden Gate Bridge (US-101) and the Bay Bridge (I-80), respectively. Regional access to the south is provided by local streets, US-101 and I-280.

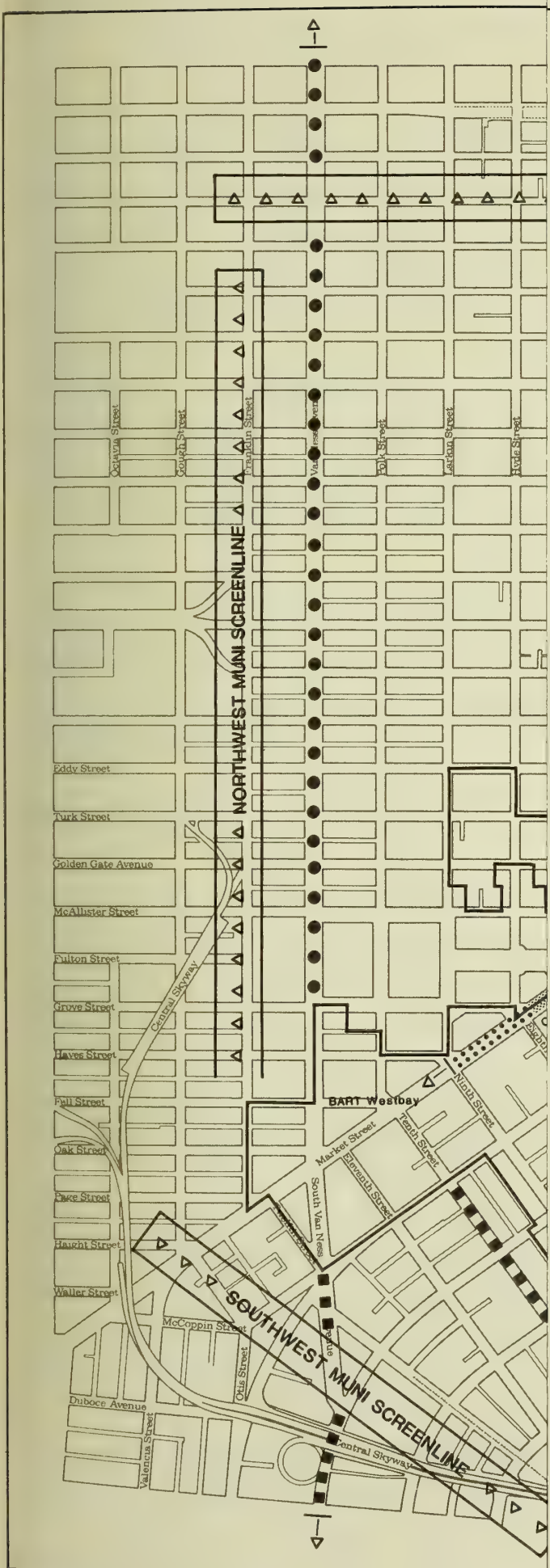
Local and regional transit agencies provide public transportation service to the C-3 District. (See Figure IV.E.2, p. IV.E.4.) The San Francisco Municipal Railway (Muni) provides motor coach, trolley coach and light rail transit service within San Francisco. The Bay Area Rapid Transit District (BART) provides commuter rail service to four C-3 District stations in the Market Street Subway from San Francisco, Alameda and Contra Costa Counties. BART's western terminus in Daly City provides limited service to San Mateo County. The Alameda-Contra Costa Transit District (AC) provides transbay motor coach service to the East Bay from a terminal at First and Mission Streets. The San Mateo County Transit District (SamTrans) provides commuter motor coach service from San Mateo County. The Golden Gate Bridge, Highway and Transportation District (GGT) operates motor coach, subscription bus, and ridesharing (vanpool) services to and from Marin and Sonoma Counties. Independently owned and operated jitneys provide service on Mission Street.

Two transportation terminals serving the C-3 District are located outside its boundaries. Ferry service from a terminal at the east end of Market Street to and from Marin County is provided by Golden Gate Transit (to Larkspur and Sausalito) and Harbor Carriers (to Tiburon). Commuter rail service (CalTrain) to and from a terminal at Fourth and Townsend Streets is provided by the Southern Pacific Railroad in cooperation with the California Department of Transportation (CalTrans). Both terminals are connected to the C-3 District by Muni routes.

Travel Demand Analysis

An analysis of travel demand is necessary to forecast travel to and from the C-3 District. Travel demand analysis requires estimation of trip generation, trip distribution, and trip assignment. Appendix J contains a complete description of the process and methodology used. A brief description of the process is contained in the following paragraphs.

Trip generation is generally based on indicators or predictors of travel, such as land use or type of business activity, size of development, and employment. Studies have been



— C - 3 DISTRICT BOUNDARY

△ TRANSIT SCREENLINE

▶▶▶ A.C. TRANSIT
(Screenline at Bay Bridge Toll Plaza)

..... BAY AREA RAPID TRANSIT
BART Station

● ● GOLDEN GATE TRANSIT
(Screenline at Golden Gate Bridge Toll Plaza)

🚢 FERRY
TIBURON (Harbor Carriers)
SAUSALITO (Golden Gate Transit)
LARKSPUR (Golden Gate Transit)

■ ■ ■ SAMTRANS
(Screenline at San Mateo County Line)

▨ SOUTHERN PACIFIC RAILWAY (CalTrans)

△ △ MUNI SCREENLINE

Northwest Screenline - Serving Areas 11, 12
(See Figure IV.E.1)

ROUTES: 1, 1AX, 1BX, 2, 4, 5, 21, 31, 31AX, 31BX, 38, 38L, 38AX, 38BX

Northeast Screenline - Serving Areas 13, 14
ROUTES: 3, 15, 19, 25, 30, 30X, 30AX, 30BX, 32, 41TC, 42, 45, 59, 60

Southeast Screenline - Serving Areas 6, 7, 8, 9, 10
ROUTES: 15, 19, 25, 30X, 30AX, 30BX, 40MC, 47

Southwest Screenline - Serving Areas 1, 2, 3, 4, 5
ROUTES: 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 16X, 17X, 26, 27, 66L, 71, 72X, J, K, L, M, N

SPECIAL STUDY LOCATIONS

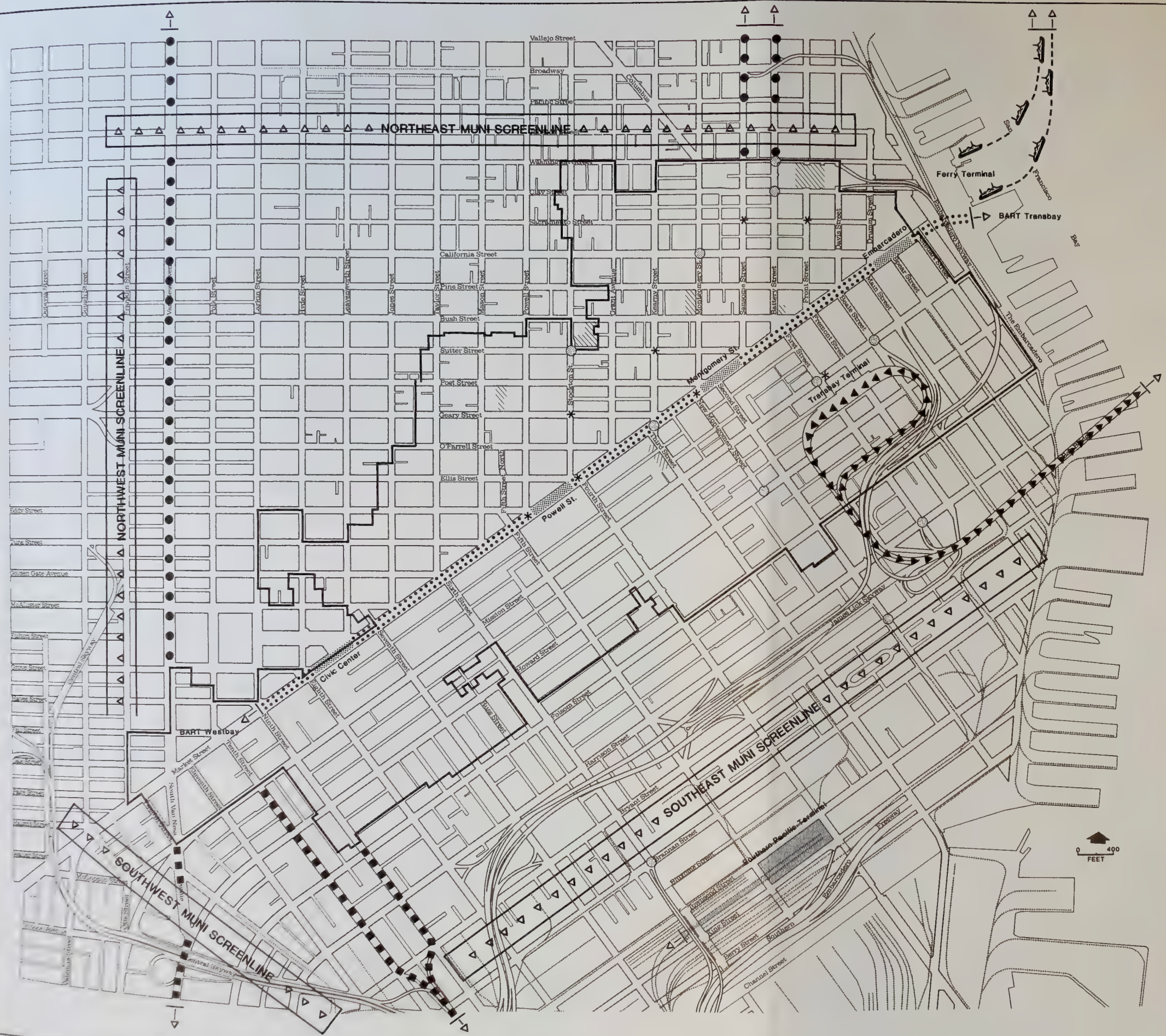
● Intersection Study

* Pedestrian Study

▨ Parking Study

FIGURE IV.E.2:
C-3 DISTRICT SCREENLINES AND
SPECIAL STUDY LOCATIONS

SOURCE: Environmental Science Associates, Inc.



- C - 3 DISTRICT BOUNDARY
- ↑ TRANSIT SCREENLINE
- ▶▶▶ A.C. TRANSIT
(Screenline at Bay Bridge Toll Plaza)
- BAY AREA RAPID TRANSIT
▨ BART Station
- ● GOLDEN GATE TRANSIT
(Screenline at Golden Gate Bridge Toll Plaza)
- 🚢 FERRY
TIBURON (Harbor Carriers)
SAUSALITO (Golden Gate Transit)
LARKSPUR (Golden Gate Transit)
- ■ ■ SAMTRANS
(Screenline at San Mateo County Line)
- ▨ SOUTHERN PACIFIC RAILWAY (CalTrans)
- ◻ ▲ MUNI SCREENLINE
Northwest Screenline - Serving Areas 11, 12
(See Figure IV.E.1)
ROUTES: 1, 1AX, 1BX, 2, 4, 5, 21, 31, 31AX, 31BX, 38, 38L, 38AX, 38BX
- Northeast Screenline - Serving Areas 13, 14
ROUTES: 3, 15, 19, 25, 30, 30X, 30AX, 30BX, 32, 41TC, 42, 45, 59, 60
- Southeast Screenline - Serving Areas 6, 7, 8, 9, 10
ROUTES: 15, 19, 25, 30X, 30AX, 30BX, 40MC, 47
- Southwest Screenline - Serving Areas 1, 2, 3, 4, 5
ROUTES: 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 16X, 17X, 26, 27, 66L, 71, 72X, J, K, L, M, N
- SPECIAL STUDY LOCATIONS
- Intersection Study
- * Pedestrian Study
- ▣ Parking Study

FIGURE IV.E.2:
C-3 DISTRICT SCREENLINES AND
SPECIAL STUDY LOCATIONS

SOURCE: Environmental Science Associates, Inc.

IV. Environmental Setting

conducted to collect data from which trip generation rates have been calculated for different types of business activities./1/ The trip generation rates are designed to permit estimation of total trips to or from specific sites (e.g., an office building) including employee work trips, employee trips other than work (such as lunch hour trips), service or maintenance personnel trips, deliveries, and visitors' trips. The trip generation rates used in this analysis are shown in Table J.1, p. J.4.

The origins and destinations of travel form the basis for the trip distribution analysis. Surveys of employees have been used to determine the distribution of work trips, and surveys of visitors have been used to estimate the distribution of non-work trips./2/ The distribution analysis determines the percentage of trips to and from specific areas.

Trip assignment is the process of assigning trips to specific roadways and transit routes or corridors. The procedure is dependent on the trip distribution analysis as well as modal split data (see Section VIII., p. VIII.3). As with trip distribution, existing modal split information has been developed from surveys of employees for work trips and visitors for non-work trips./2/

Trip Generation

The total employment for the C-3 District in 1984 is forecast to be 280,860 plus 5,370 construction workers for a total of 286,230 employees (see Table IV.C.10, p. IV.C.26 and Table V.C.6, p. V.C.16). Of this total, 5,780 employees would be classified as building maintenance and security. The trips for building maintenance and security employees are included in the trip generation rates for the categories of office, retail and cultural/institutional/educational./3/ The total 1984 C-3 District employment for the purpose of estimating trip generation would therefore be 280,450./4/

The p.m. peak hour (4:30 - 5:30 p.m.) was chosen as the primary analysis period. Travel during this hour on weekdays reaches maximum levels on all transportation modes serving the C-3 District. Construction workers and building maintenance and security employees typically do not travel during the p.m. peak hour and they are therefore not included in estimates of peak-hour travel.

The total p.m. peak hour travel (including work and non-work trips) expected to be generated by the C-3 District in 1984 would be about 180,000 person trip-ends (pte).

Table IV.E.1 shows the distribution of the p.m. peak hour travel by transportation mode. (See Appendix J, Table J.1 for trip generation rates.)

Modal Split

The modal split percentages for work trips are based on the Downtown EIR Employer/Employee survey, observations of existing conditions, and predictions of change. (See Appendix F for a description of the survey and Appendix J for a description of the methodology used to forecast modal split.) Modal split percentages for non-work

TABLE IV.E.1: C-3 DISTRICT TOTAL P.M. PEAK-HOUR PERSON TRIP-ENDS BY MODE, 1984 (a)

Primary Mode of Travel	Subarea(b)							Total	Percent
	1	2	3	4	5	6	7		
Drive Alone	11,480	2,710	1,510	1,840	2,720	4,290	2,150	26,700	15
Carpool(d)	9,870	1,270	1,650	1,610	930	5,470	320	21,120	12
Vanpool(e)	2,170	310	-	-	-	-	-	2,480	1
Muni	20,620	1,550	1,770	1,470	4,890	2,330	2,240	34,870	20
BART	17,120	2,170	500	2,280	1,320	1,640	770	25,800	14
AC	5,480	1,460	250	130	30	360	-	7,710	4
SamTrans	1,080	270	-	-	180	380	-	1,910	1
Charter/Club Bus	870	100	-	-	-	-	-	970	1
CalTrain (SPRR)	2,420	380	60	170	110	310	80	3,530	2
GGT Bus	4,940	310	120	330	180	70	30	5,980	3
GGT Ferry	440	340	-	-	-	-	-	780	1
Tiburon Ferry	150	30	-	-	-	-	-	180	-
Jitney	90	60	-	-	300	-	-	450	1
Motorcycle	230	-	-	100	-	-	-	330	-
Bicycle	10	-	-	80	-	-	-	90	-
Walk(f)	19,140	2,910	3,600	2,810	6,820	6,160	4,010	45,450	25
Taxi	180	-	-	-	260	-	-	440	-
TOTALS	96,290	13,870	9,460	10,820	17,740	21,010	9,600	178,790	100 %

(a) Total person trip-ends to destinations or from origins in the C-3 District

(b) Subarea boundaries are shown in Figure II.C.1.

(c) Each mode as a percent of the total

(d) Carpools are vehicles with up to three persons including the driver.

(e) Vanpools are vehicles with more than three persons including the driver.

(f) Walk trips include both home-based and non-home-based travel. The walk trips are about 15% home-based (i.e., persons walking home) and about 85% non-home-based (i.e., persons walking to destinations other than home).

SOURCE: TJKM Transportation Consultants

IV. Environmental Setting

trips (those with trip purpose other than work) are based on information from travel surveys conducted in the downtown areas of San Francisco and other cities, as well as observations of existing conditions and predictions of change./5/

Modal split for peak-hour trips and for total daily trips differ in relation to the attractiveness of specific modes of travel during different times of the day (see Appendix J). Residence location and modal split percentages for 1984 C-3 District p.m. peak-hour work travel by Subarea are shown in Appendix J, Table J.9. Modal split percentages for non-work travel are shown in Appendix J, Table J.6. As described in the appendix, non-work travel during the p.m. peak hour is more locally oriented than non-work travel during the entire day.

The 1984 modal split differs from the existing (1981/82) modal split. On a composite (both work and non-work) basis, the 1984 modal split for the p.m. peak hour would have about 28% of the travel in automobiles (including carpools and vanpools), 47% on transit, and about 25% as primary walk trips (i.e., trips that would not use any other transportation mode). Of the 25% walk trips, about 15% (4% of the total C-3 District p.m. peak-hour travel) would be home-based trips (i.e., persons walking to or from home). The remainder would be non-home-based trips (i.e., persons walking to destinations other than home such as stores, restaurants, etc.). The 1984 modal split reflects an approximate one percent shift from "Drive Alone" to transit, carpool and vanpool.

Trip Assignments

The total person trip-ends generated by the expected employment and land use in the C-3 District and the modal split and residence patterns were used to determine the expected 1984 transit ridership and traffic volumes.

Estimates of non-C-3 District travel (travel not originating in or destined to the C-3 District) on the regional transportation network were initially developed by subtracting 1981/82 trips generated by the C-3 District from observations of total travel on the transportation network. Once identified for 1981/82 conditions, non-C-3 travel volumes were projected into the future on the basis of historical growth trends (see Appendix J).

Public Transportation

The projected 1984 transit ridership at regional and C-3 District screenlines is shown in Table IV.E.2. The screenlines represent boundary lines for routes or groups of routes and are located to correspond to points of maximum loading for most or all of the routes in each group. The Muni routes in each group and the screenlines are also shown in Figure IV.E.2.

The ridership shown in Table IV.E.2 includes both travel originating inside the C-3 District and travel originating outside the C-3 District and passing through it. C-3 District travel is summarized in Table IV.E.1, p. IV.E.6. For travel not originating in or destined to the C-3 District, the transit ridership (included in the ridership shown in Table IV.E.2) is the expected future ridership based on historical growth trends. The capacities are based on the current (1982-87) Five-year plans for each transit agency./6/ Capacity has been assumed to be recommended maximum vehicle loadings based on manufacturers' specifications. In some cases, the maximums may exceed transit agency standards or union contracts. In all cases the recommended maximums are less than "crush" loadings that occasionally occur.

The p.m. peak-hour demand and capacity figures shown in Table IV.E.2 indicate that, with the exception of BART Transbay, no demand would exceed total (seated and standing) capacity available in 1984. BART Transbay would theoretically operate at a load factor of 1.6, which is within BART's crush loading of 1.7 times seated capacity. However, these demand figures are for the entire p.m. peak hour. During the hour, the demand varies and, for example, certain buses on some Muni routes may operate at capacity or the demand may exceed capacity for a period of time during the peak hour. In general, the conditions expected in 1984 would be similar to the existing conditions since growth in transit capacity is expected to approximate the growth in demand by 1984.

Traffic

Transportation modes (see Table IV.E.1, p.IV.E.6) with primary impact on traffic volumes include Drive Alone, Carpool, and Vanpool. The total number of vehicles for these modes was assigned to the roadway network on the basis of the trip generation and modal split methodology described in Appendix J. Vehicles generated by employment in the Subareas

TABLE IV.E.2: P.M. PEAK-HOUR OUTBOUND TRANSIT RIDERSHIPS AND CAPACITIES AT REGIONAL AND C-3 DISTRICT SCREENLINES, 1984

Transit Agency	Screenline(a)	Demand (Riders)(b)	System Capacity(c)	
			Seats	Seated Plus Standing
Muni	Northeast	6,450	5,230	7,850
	Northwest	8,900	6,920	10,380
	Southwest	12,220	10,350	17,600
	Southeast	2,710	2,270	3,410
BART	Trans-Bay Tube	16,500	10,500	15,750
	Southwest of Civic Center	7,470	7,040	10,560
AC Transit	Bay Bridge Toll Plaza	8,660	10,690	13,360
GGT Bus	Golden Gate Bridge Toll Plaza	4,480	5,960	7,450
GGT Ferry	Bay	780	2,650	3,840
Tiburon Ferry	Bay	180	450	650
SamTrans	San Mateo County Line	1,910	1,740	2,180
CalTrain (SPRR)	Fourth Street Station	3,130	5,090	5,090

(a) Screenlines are shown in Figure IV.E.2, p. IV.E.4.

(b) Demand includes both C-3 District transit riders and transit riders from outside the C-3 District.

(c) System capacity estimates are based on 1982-87 Five-year Plans for each agency.

SOURCE: TJKM Transportation Consultants

were assigned to the roadways on the basis of residence location for work trips and respective origins and destinations for non-work trips. The projected 1984 p.m. peak-hour (4:30 - 5:30 p.m.) regional traffic volumes are shown in Table IV.E.3. The expected volumes in 1984 would be at or near the roadway capacities for outbound (from the C-3 District) traffic during the peak hour. The demand on I-280 is shown to exceed capacity during the p.m. peak hour. This does not mean that jammed conditions would exist for the entire hour; rather, I-280 has been assumed to operate near capacity in 1984 with the excess demand shifting to local streets or to US-101. Delay would most likely be increased by the near capacity operation.

TABLE IV.E.3: P.M. PEAK-HOUR OUTBOUND TRAFFIC VOLUMES AND CAPACITIES AT REGIONAL SCREENLINES (a), 1984

<u>Freeway</u>	<u>Direction</u>	<u>Demand (vph) (b)</u>	<u>Capacity (vph)</u>
Bay Bridge (I-80)	East	8,400	9,000
Golden Gate Bridge (US-101)	North	6,610	7,200
US-101 (south of Harney Way)	South	7,400	8,000
I-280 (between Alemany Boulevard and San Jose Avenue)	South	8,210 (c)	8,000

(a) See Figure IV.E.2 for locations of screenlines.

(b) Vehicles per hour

(c) Although demand is shown to exceed capacity, I-280 would most likely operate near capacity with excess demand expected to shift to alternate routes (US-101 or surface streets); delay on all affected routes would most likely be increased.

SOURCE: TJKM Transportation Consultants

Vehicles can generally leave each Subarea in four directions (north, south, east and west). Directional capacities^{7/} were developed for each Subarea on the basis of the number of roadways providing access to each Subarea. The directional traffic volumes expected in 1984 were predicted for each Subarea. For example, vehicles destined to the North Bay were assigned to roadways leading generally to the north and to the west from each Subarea. Since these capacities would be combined capacities for a varying number of roadways, the values should be considered as indicators of general conditions for comparison purposes. The total directional volumes and volume-to-capacity (V/C) ratios for each Subarea in 1984 are shown in Table IV.E.4, p. IV.E.11.

Eleven intersections (see Figure IV.E.2) were selected for p.m. peak hour traffic analyses to provide a basis of comparison for conditions expected in future years. These intersections were selected through discussions with the City Planning Department and the Traffic Division of the Engineering Bureau of the City Public Works Department.^{8/}

TABLE IV.E.4: C-3 DISTRICT PEAK-HOUR OUTBOUND DIRECTIONAL TRAFFIC VOLUMES AND VOLUME-TO-CAPACITY (V/C) RATIOS, BY SUBAREA, 1984

Subarea	Northbound			Southbound			Eastbound			Westbound		
	Demand(a)	Capacity	V/C (b)	Demand(a)	Capacity	V/C (b)	Demand(a)	Capacity	V/C (b)	Demand(a)	Capacity	V/C (b)
1	2,980	8,590	0.35	4,200	11,100	0.38	-	-	-	9,740	18,400	0.53
2	5,520	11,260	0.49	3,790	11,030	0.34	-	-	-	2,710	2,860	0.95
3	7,090	13,900	0.51	5,570	8,610	0.65	2,270	3,330	0.68	2,740	3,570	0.77
4	6,630	7,340	0.90	2,630	6,370	0.41	1,780	3,670	0.49	4,510	8,720	0.52
5	2,620	8,390	0.31	3,490	6,440	0.54	4,830	12,760	0.38	6,910	15,580	0.44
6	2,890	6,300	0.46	2,140	4,650	0.46	1,520	4,590	0.33	4,280	11,190	0.38
7	1,820	4,250	0.43	780	2,860	0.27	2,820	5,320	0.53	3,720	8,770	0.42

(a) Vehicles Per Hour

(b) Volume/capacity for directional intersection approaches as shown

SOURCE: TJKM Transportation Consultants

The intersections selected are key intersections near freeway ramps serving the C-3 District or key intersections in the area that function as indicators of peak-hour traffic conditions. The V/C ratios and Levels of Service (LOS) expected at these intersections in 1984 are shown in Table IV.E.5. Two of the intersections (Mission / Beale Streets, Brannan / Sixth Streets) would be expected to operate at Level of Service E or worse conditions in 1984. At these intersections, traffic conditions could generally be described as poor with vehicles delayed up to several cycles of the traffic signals. Level of Service F operations indicate jammed conditions and traffic would be expected to shift to other intersections or to different times of day, if possible.

Traffic conditions both on the freeways and on the surface streets in 1984 would be expected to be similar to existing conditions. Increased use of transit and ridesharing has been assumed to allow about the same number of vehicles to operate on the two bridges during the peak hour. Congestion would be expected to increase on the freeways to the south. Only a minimal shift from Drive Alone to transit or ridesharing is expected because of the lack of incentives for Peninsula drivers to shift (i.e., no carpool lanes, limited transit availability) and the relatively high level of roadway and freeway access. In the absence of substantially increased congestion on the freeways to the south, little or no shift to transit or ridesharing could be anticipated.

Parking

The parking analysis included surveys of six parking facilities in the C-3 District (see Figure IV.E.2). The facilities surveyed were the Sutter-Stockton Garage, the Russ Building garage at 235 Montgomery Street, the St. Francis Hotel garage at Powell and Geary Streets, the One Embarcadero Center garage, and the garage at 36 Battery Street. The parking surveys were conducted to obtain data on parking accumulation (distribution of parking over the day), duration (length of time parked), and occupancy (total number of vehicles parked).

An inventory by the Department of City Planning shows a total of approximately 38,000 off-street parking spaces in or near the C-3 District./9/ Data from the Department of Public Works indicate a total of 2,000 on-street metered parking spaces in the C-3 District./10/ In addition, there are approximately 2,500 on-street spaces and 5,200

TABLE IV.E.5: PEAK-HOUR VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS) AT SPECIAL STUDY LOCATIONS(a), 1984

<u>Intersection</u>	<u>A.M. Peak Hour (7:00 - 8:00 a.m.)</u>		<u>P.M. Peak Hour (4:30 - 5:30 p.m.)</u>	
	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>
Battery & Washington Streets	0.65	B	-	-
Battery & Clay Streets	-	-	0.71	C
Beale & Mission Streets	0.90	D	0.92	E
Brannan & Sixth Streets	0.92	E	1.24	F(c)
Bryant & Second Streets	0.69	B	0.61	B(d)
California & Montgomery Streets	0.80	C	0.87	D
First & Mission Streets	0.78	C	0.89	D
First & Harrison Streets	0.46	A	0.62	B(b,d)
Howard & New Montgomery Streets	0.39	A	0.53	A
Market & Third Streets	0.71	C	0.80	C
Stockton & Sutter Streets	0.59	A	0.85	D

- (a) See Figure IV.E.2 for special study locations.
- (b) On-ramp to Bay Bridge from Bryant Street; currently operating as bus/carpool-only ramp during p.m. peak hour. The V/C and LOS shown are for counts taken when the intersection was open to all vehicles.
- (c) Based on demand expected in 1984. Since demand would exceed capacity, some shift in travel would occur. (See text.)
- (d) These two intersections are the easternmost access ramps to the Bay Bridge that connect directly to surface streets. Consequently, both intersections are subject to substantial changes in operating conditions depending upon the degree of congestion on the Bay Bridge.

SOURCE: TJKM Transportation Consultants

off-street spaces in the two-block wide area (bounded by Folsom Street, the Embarcadero, Bryant Street and Ninth Street) adjacent to the southern boundary of the C-3 District./11/ If the assumption is made that 50 percent of the 7,700 spaces to the south of the C-3 District are used by persons destined to the C-3 District, the total number of inventoried parking spaces available for C-3 District parking would be 43,900. On-street spaces in neighboring residential and commercial areas provide more parking.

A review of approved projects and projects under construction (as of January 27, 1983) indicate that approximately 2,000 net new spaces would be added between 1981 and 1984. The total number of spaces available to the C-3 District in 1984 is therefore estimated to be about 50,000. The expected demand (both long-term and short-term) for spaces in 1984 would be 45,600 (see Appendix J) resulting in an average occupancy of approximately 91 percent. The expected demand for spaces needed is based on the trip generation and modal split percentages shown in Appendix J for work trips and non-work trips.

Pedestrian Circulation

The eight pedestrian study locations shown in Figure IV.E.2 serve as indicators of overall pedestrian activity in the study area. The pedestrian activity expected in 1984 is shown in Table IV.E.6. During the noon hour, four sidewalks would be expected to be operating in "constrained" conditions in 1984, indicating some limitations in movement but not into the "crowded" (or restricted) category. As described in Appendix J in Table J.13 and Figure J.2, pedestrian flow regimes with conditions worse than "constrained" include "crowded," then "congested," and finally "jammed." During the p.m. peak hour, only one sidewalk would be expected to operate in "constrained" conditions.

Pedestrian mobility in 1984 would be expected to be generally more confined than under existing conditions as there would be an increase in the overall number of C-3 District users.

NOTES - Transportation and Circulation

/1/ Trip generation rates are from the following references:

California Department of Transportation (CalTrans), Progress Report(s) on Trip Ends Generation Research Counts, 14 reports published periodically from 1964 through 1982.

Institute of Transportation Engineers, Trip Generation, 1979.

San Diego Association of Governments and CalTrans (District 11), San Diego Traffic Generators, 1981.

Arizona Department of Transportation, Arizona Traffic Generators, 1979.
Transportation Research Board, Quick Response Urban Travel Estimation Techniques and Transferable Parameters, National Cooperative Highway Research Program Report 187, 1978.

TABLE IV.E.6: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 1984

Location	Quadrant	Rate in P/F/M(a)		Pedestrian Flow Regime (b)	
		Noon Hour	P.M. Peak Hour	Noon Hour	P.M. Peak Hour
Sacramento	NW	3.1	2.5	Impeded	Impeded
Front	NW	1.1	0.9	Unimpeded	Unimpeded
Front	NE	2.0	0.9	Impeded	Unimpeded
Sacramento	NE	3.3	1.8	Impeded	Unimpeded
Sacramento	SE	1.9	1.6	Unimpeded	Unimpeded
Front	SE	3.8	2.1	Impeded	Impeded
Front	SW	4.6	4.7	Impeded	Impeded
Sacramento	SW	3.2	3.0	Impeded	Impeded
Sacramento	NW	2.1	1.0	Impeded	Unimpeded
Sansome	NW	2.1	2.5	Impeded	Impeded
Sansome	NE	1.4	1.4	Unimpeded	Unimpeded
Sacramento	NE	2.3	1.4	Impeded	Unimpeded
Sacramento	SE	1.9	1.1	Unimpeded	Unimpeded
Sansome	SE	2.9	2.3	Impeded	Impeded
Sansome	SW	1.6	1.7	Unimpeded	Unimpeded
Sacramento	SW	1.5	1.0	Unimpeded	Unimpeded
First	NE	2.1	3.8	Impeded	Impeded
Mission	NE	1.9	0.9	Unimpeded	Unimpeded
Mission	SE	0.8	6.5	Unimpeded	Constrained
First	SE	1.4	1.4	Unimpeded	Unimpeded
First	SW	2.1	2.4	Impeded	Impeded
Mission	SW	0.9	4.3	Unimpeded	Impeded
Mission	NW	2.0	3.0	Impeded	Impeded
First	NW	1.9	2.2	Unimpeded	Impeded
Montgomery	NE	6.7	3.5	Constrained	Impeded
Market	NW	3.4	2.3	Impeded	Impeded
Market	NE	3.7	2.4	Impeded	Impeded
New Montgomery	N	2.2	1.7	Impeded	Unimpeded
New Montgomery	S	2.8	2.1	Impeded	Impeded
Market	SE	2.7	3.0	Impeded	Impeded
Market	SW	1.9	2.3	Unimpeded	Impeded
Post	S	5.0	1.1	Impeded	Unimpeded
Post	N	3.2	0.9	Impeded	Unimpeded
Montgomery	NW	5.4	4.1	Impeded	Impeded
Sutter	NW	5.0	3.4	Impeded	Impeded
Kearny	NW	6.2	2.0	Constrained	Impeded
Kearny	NE	4.3	2.6	Impeded	Impeded
Sutter	NE	4.1	2.2	Impeded	Impeded
Sutter	SE	2.6	1.4	Impeded	Unimpeded
Kearny	SE	3.3	1.9	Impeded	Unimpeded
Kearny	SW	4.1	2.1	Impeded	Impeded
Sutter	SW	3.7	1.8	Impeded	Unimpeded
Geary	NW	1.3	1.3	Unimpeded	Unimpeded
Stockton	NW	3.3	3.2	Impeded	Impeded
Stockton	NE	4.6	3.0	Impeded	Impeded
Geary	NE	5.5	3.6	Impeded	Impeded
Geary	SE	3.2	2.4	Impeded	Impeded
Stockton	SE	2.3	2.4	Impeded	Impeded
Stockton	SW	6.0	5.6	Constrained	Impeded
Geary	SW	6.9	5.3	Constrained	Impeded
Stockton	NE	2.0	1.5	Impeded	Unimpeded
Market	NE	2.8	2.5	Impeded	Impeded
Market	SE	2.6	2.3	Impeded	Impeded
Fourth	SE	1.4	1.6	Unimpeded	Unimpeded
Fourth	SW	4.1	3.2	Impeded	Impeded
Market	SW	3.8	3.0	Impeded	Impeded
Market	NW	2.8	3.0	Impeded	Impeded
Ellis	NW	0.8	0.9	Unimpeded	Unimpeded
Ellis	NW	1.3	1.3	Unimpeded	Unimpeded
Stockton	NW	3.7	4.4	Impeded	Impeded
Powell	E	2.1	1.4	Impeded	Unimpeded
Market	NE	3.0	1.8	Impeded	Unimpeded
Market	SE	3.7	2.3	Impeded	Impeded
Market	SW	2.9	2.1	Impeded	Impeded
Market	NW	3.6	3.4	Impeded	Impeded
Fifth	E	0.4	0.4	Open	Open
Plaza	-	1.0	0.8	Unimpeded	Unimpeded
Powell	W	2.8	2.9	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J

SOURCE: TJKM Transportation Consultants

IV. Environmental Setting

- /2/ The Downtown Employer/Employee survey methodology is explained in Appendix F. Non-work travel surveys are from a survey conducted by Environmental Science Associates on June 17, 1982, at Embarcadero Center, and article by Murthy Bondada, "Intra-CBD Secondary Travel Patterns of Downtown Workers," Transportation Engineering Journal of ASCE, Vol. 108 (January, 1982), pp. 15-27.
- /3/ Trip generation rates, based on the number of employees in a particular business activity, include employee work and other trips, as well as trips by visitors, maintenance and service personnel, deliveries and others.
- /4/ 286,230 employees - 5,780 employees = 280,250 employees.
- /5/ Survey conducted by Environmental Science Associates on June 17, 1982, at Embarcadero Center, and article by Murthy Bondada, "Intra-CBD Secondary Travel Patterns of Downtown Workers," Transportation Engineering Journal of ASCE, Vol. 108 (January, 1982), pp. 15-27.
- /6/ Transit system capacities based on:
 - 1982-87 Five-year Plans for:
 - San Francisco Municipal Railway
 - Bay Area Rapid Transit District
 - A-C Transit District
 - San Mateo County Transit District
 - Golden Gate Bridge Highway and Transportation District
 - CalTrain (Southern Pacific Railroad)
- /7/ Highway Research Board, Highway Capacity Manual, (Washington, D. C., 1965), pp. 111-159.
- /8/ City staff involved in the discussions were Chi-Hsin Shao, Glen Erikson (DCP) and Nelson Wong, Scott Shoaf (DPW).
- /9/ Number of spaces obtained from C-3 Districts Parking Update, San Francisco Department of City Planning (December, 1982.)
- /10/ Number of spaces obtained from "Parking Meter Spaces", San Francisco Department of Public Works.
- /11/ Number of spaces and occupancy obtained from South-of-Market parking inventory and survey conducted by San Francisco Department of City Planning, 1982.

F. COMMUNITY SERVICES

SOLID WASTE

In 1981 San Francisco produced 688,000 tons of domestic and commercial solid waste, of which 19% were recycled./1/ Of the remaining 557,000 tons, about 73,000 tons or 13%, were collected in the C-3 District./2/ The composition of the C-3 solid waste stream varies by subarea, reflecting the dominant land uses within each. For example, the relatively homogenous Central Office area (Subarea 1) produces the greatest percentage of paper (68%), while the varied land uses of the Tenderloin (Subarea 5) produce a highly mixed waste composition./2/

Waste from the C-3 District is collected weekly on regular routes established by the Golden Gate Disposal Company under contract to the City and County of San Francisco./3/ From collection points the waste is trucked to a transfer station in Brisbane where it is transferred to larger trucks and hauled 32 miles to the Mountain View Regional Shoreline landfill in Santa Clara County. The City has been using this landfill since 1970. The current landfill contract ends in October 1983 and the City of Mountain View has decided not to renew it.

In July 1982, after examining several potential alternate disposal sites, the City signed a five-year contract with Alameda County to use the Altamont Hills landfill beginning on November 1, 1983 and ending November 1, 1988./4/ Over the contract period about 2.7 million tons of San Francisco solid waste will be trucked the 54 miles to the landfill site. The Altamont Hills landfill provides a short-term solution for disposal of San Francisco's solid wastes. In response to the recognized need for a long-term solid waste disposal solution, the City is considering several sites for a Resource Recovery Facility where recyclable components of the waste stream could be removed for sale and the remainder burned to produce electricity from steam./5,6/ In the November 1982 election Brisbane voters rejected a site on the Brisbane/San Francisco border. The City is continuing to examine potential sites for the Resource Recovery Facility./5/

The production of solid waste in the C-3 District has been projected for 1984 using information provided by Golden Gate Disposal Company./2/ In 1984 the C-3 study area

will produce about 78,000 tons of waste materials, all of which will be disposed of at the Altamont Hills landfill.

While this is an overall increase in waste generation, the relative contribution of each subarea to the total waste stream would be nearly the same as in 1981. A trend does become evident by 1984, however. Because the land use mix within the Central South of Market area (Subarea 3) begins to shift from industrial use to office use (See Section IV.B, Land Use and Real Estate Development), the composition of the waste from this area is expected to shift accordingly, producing more paper and less industrial materials than in 1981.

POLICE

San Francisco's C-3 District overlaps portions of three Police Department Districts: The Central District, the Southern District and the Northern District (see Figure IV.F.1). The Central District generally includes most of the downtown area north of Market Street. It is bounded by the northern waterfront from Aquatic Park to the Ferry Building, Market Street and Leavenworth Street. The Southern District generally includes the downtown area south of Market Street. It is bounded by the southern waterfront from the Ferry Building to Sixteenth Street (south of China Basins), Sixteenth Street, the Central Skyway (U.S. 101) from Sixteenth Street to Market Street and Market Street. The Northern District is north of Market Street and generally extends west from Leavenworth Street to Steiner Street.

Distribution of Police Department personnel is shown in Table IV.F.1. The distribution shown is for the City as a whole. Staff assigned to the Central, Southern and Northern Districts are shown as part of the Field Operations Bureau. No information is available concerning the percentages of time on duty that officers from the Central, Southern and Northern Districts spend in the C-3 District./7/ Data are also unavailable concerning the allocation of duty time by support personnel (Office of the Chief, Administration Bureau, Investigations Bureau, Support Services Bureau) to specific incidents or specific areas of the City.

Average response times (from the time a call is received to the time officers arrive at the scene) for a high-priority call in the Central, Southern and Northern Districts are

IV. Environmental Setting

5.33 minutes, 4.66 minutes and 4.33 minutes, respectively. Response times for low-priority calls are 6.33 minutes, 6.00 minutes and 6.00 minutes, respectively./8/

In Fiscal Year 1981-82 (July 1 - June 30), 122,581 criminal incidents were reported citywide. Of these, 69,285 were classified as Part I and 53,296 were classified as Part II crimes. Part I incidents are those incidents for which the Police most likely to be called in, such as thefts, burglaries and assaults./9/ Part II incidents are those for which the Police are likely to initiate the response, such as narcotics, vice or disorderly conduct./9/ Many, although not all, Part II crimes are "street crimes" or "nonviolent" crimes./9/ Over the past five years (1977-82) the total number of Part I crimes reported has remained almost constant at about 80,000 incidents per year. Part II crimes, however, have risen steadily from 33,907 in 1977 to 53,296 in 1981-82./10/

The Central, Southern and Northern Districts, of the City's nine Police Districts, have consistently had among the greatest numbers of crimes reported. In 1981-82 the Central District experienced 23,857 incidents or about 19% of the City's total. The Southern District had 13,461 incidents, or about 11% of the total. The Northern District had 21,557 incidents, or about 18% of the total. The three Districts are first, fourth and second, respectively, in total numbers of reported incidents in the City./11/

The crime rates and predominant types of crime for each of the C-3 District subareas are described below, based on Police Department crime statistics by "reporting area."/12/ Reporting areas vary in size, but tend to cover about nine blocks each. Because reporting area boundaries do not coincide with the subarea boundaries, the descriptions below are generalizations drawn from crime trends in all reporting areas containing a portion of the subarea discussed.

Table IV.F.2 shows ranges of criminal incidents reported in 1982 for those reporting areas overlapping each subarea. Although this information should be interpreted qualitatively (because reporting areas are not all exactly the same size, because the fit of reporting areas to subareas varies from subarea to subarea, and because some subareas are overlapped by more reporting areas than are other subareas), some conclusions can be drawn. Subareas showing high numbers of total incidents per reporting area (in comparison with the District averages shown at the bottom of the table) contain

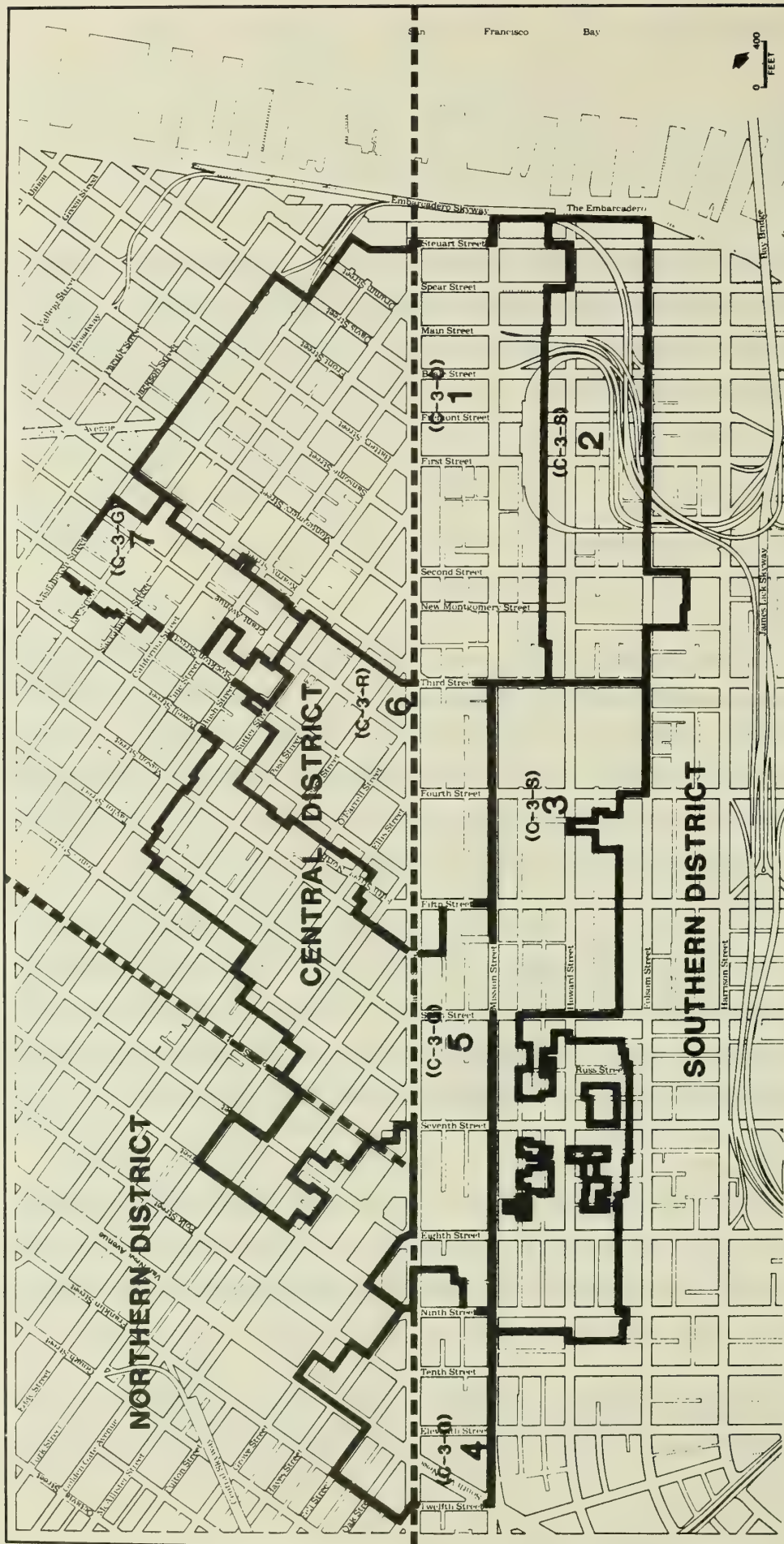


FIGURE IV.F.1:

DOWNTOWN POLICE DISTRICTS

SOURCE San Francisco Police Department

--- DISTRICT BOUNDARIES

IV. Environmental Setting

TABLE IV.F.1: SAN FRANCISCO POLICE DEPARTMENT DISTRIBUTION OF PERSONNEL, 1982 (a)

	<u>Exempt</u>	<u>Capt.</u>	<u>Lieut.</u>	<u>Sgt.</u>	<u>Inspector/ Asst. Insp.</u>	<u>Police Officer</u>	<u>Total</u>
Office of the Chief							
Chief's Office Staff	1	0	0	2	2	1	6
Police Commission	1	0	0	0	0	0	1
Intelligence	0	1	0	2	13	10	26
Internal Affairs	0	1	2	7	7	1	18
Community Services	0	0	2	1	3	18	24
Staff Inspection	0	1	0	2	0	0	3
Subtotal	2	3	4	14	25	30	78
Administration Bureau							
Deputy Chief's Office	1	0	0	0	0	0	1
Personnel and Training(b)	0	2	2	10	21	142	177
Planning & Research	0	0	1	4	2	3	10
Fiscal Section	0	0	0	1	0	0	1
Legal Section	0	1	0	1	5	2	9
Subtotal	1	3	3	16	28	147	198
Field Operations Bureau							
Deputy Chief's Office	2	1	0	1	0	2	6
Field Training Office	0	0	1	2	2	66	71
Patrol Division							
Central District (c)	0	1	4	11	5	107	128
Southern District (c)	0	1	3	13	0	79	86
Potrero District	0	1	3	10	2	80	96
Mission District	0	1	3	13	1	110	128
Northern District (c)	0	1	3	12	5	124	145
Park District	0	1	3	10	2	79	95
Richmond District	0	1	4	10	2	55	82
Ingleside District	0	1	3	13	0	79	96
Taraval District	0	1	3	12	1	58	75
Tactical Division	0	1	2	13	13	78	107
Municipal Transit	0	0	1	7	7	48	63
Traffic Division	1	2	4	23	16	82	128
Subtotal	3	13	37	150	56	1047	1306
Investigation Bureau							
Deputy Chief's Office	1	1	0	0	3	0	5
Investigation Division	0	0	7	0	131	0	138
Vice Crimes Division	0	1	2	1	22	24	50
Juvenile Division	0	0	1	0	15	1	17
Subtotal	1	2	10	1	171	25	210

TABLE IV.F.1: SAN FRANCISCO POLICE DEPARTMENT DISTRIBUTION OF PERSONNEL, 1982 (a) (continued)

	<u>Exempt</u>	<u>Capt.</u>	<u>Lieut.</u>	<u>Sgt.</u>	<u>Inspector/ Asst. Insp.</u>	<u>Police Officer</u>	<u>Total</u>
Support Services Bureau							
Deputy Chief's Office	1	0	0	1	0	0	2
Criminal I.D.	0	1	5	9	1	25	41
Communications	0	1	2	5	2	10	20
Criminalistics	1	0	0	3	12	7	23
Property Control	0	0	1	1	0	11	13
Subtotal	2	2	8	19	15	53	99
Total Sworn	9	23	62	200	295	1302	1891
Total Permanent/Temporary Civilian							692
TOTAL STRENGTH							2583

(a) Numbers of personnel shown are actual personnel as of June 30, 1982.

(b) Includes recruits-in-training and sworn personnel who were sick or disabled.

(c) Districts which serve the C-3 District Study Area.

SOURCE: San Francisco Police Department, September, 1982, Annual Report, 1981-82, p. 4.

"high-crime" areas. These "high-crime" areas also tend to have a large proportion of Part II crimes, which lowers the ratio of Part I / Part II incidents. For example, Subarea 5, the Tenderloin Subarea, could be said to be a "high-crime" area, because it contains reporting areas with high numbers of total incidents (and low Part I / Part II ratios). In contrast, Subarea 2, the East South of Market Subarea, shows comparatively low numbers of reported incidents in its reporting areas (and high Part I / Part II ratios).

Subarea 1, Central Office Subarea

Theft and commercial burglary are the most frequently occurring crimes in this subarea. These two categories account for about 50% of the incidents reported. The commercial burglary rate is among the highest in the City, second only to that in the Union Square area (Subarea 6). Subarea 1 falls into two Police Districts, the Central and Southern.

IV. Environmental Setting

Although the subarea's range of total incidents per reporting area is below average for the Central District (see Table IV.F.2), it is typical of that for the Southern District. The high Part I / Part II ratios are due to the high incidence of thefts and burglaries, and comparatively low incidence of Part II crimes.

Subarea 2, East South of Market Subarea

Theft, particularly grand theft (over \$200) and auto theft, are the most frequently reported incidents in Subarea 2. Thefts comprise about 70% of the incidents reported in the subarea. Because comparatively few other incidents occur here, both the number of Part II incidents and total incidents shown in Table IV.F.2 are low in comparison with the Southern District as a whole, and the Part I / Part II ratios are very high.

Subarea 3, Central South of Market Subarea

Subarea 3 cannot be characterized as a whole, because it contains a broad range of both "high-crime" and "low-crime" neighborhoods. The portions of Subarea 3 within a block-and-a-half on either side of Sixth Street have the highest crime rates in the Southern District, and among the highest in the City; the two reporting areas on either side of Sixth Street experienced about 2,500 incidents and 3,300 incidents, respectively, in 1982. Part II incidents make up about 50% to 60% of these totals. However, the occurrences of theft, burglary, assault and robbery are also high. Police reporting areas farther away from Sixth Street, however, experience comparatively little crime. Reporting areas taking in Subarea 3 near Third Street and near Ninth Street each experienced about 300 incidents in 1982. Of these, thefts and commercial burglaries were the most frequently reported incidents.

Subarea 4, South Van Ness Subarea

Theft, auto theft, commercial burglary and non-aggravated assault are reported most frequently in Subarea 4. The portion of Subarea 4 north of Market Street and adjacent to the Civic Center is part of a Police Reporting Area which in 1982 experienced the highest rate of theft in the Northern District. This area also had the second highest number of robberies, rapes and aggravated assaults in the Northern District. Parts of Subarea 4 farther away from the Civic Center (i.e., south of Market Street and west of Van Ness Avenue) have much lower crime rates; reporting areas there experienced about 800 to 1,000 incidents per year, less than half the roughly 2,100 incidents in the reporting area near the Civic Center.

TABLE IV.F.2: CRIMINAL INCIDENTS IN REPORTING AREAS OVERLAPPING C-3 DISTRICT SUBAREAS, 1982

Subarea	Criminal Incidents per Reporting Area			
	Part I (a) Incidents	Part II (b) Incidents	Ratio of Part I / Part II	Total Incidents
1	271 - 540	138 - 373	1.41 - 1.96	409 - 907
2	164 - 247	33 - 74	2.72 - 8.68	197 - 284
3	148 - 1,639	74 - 1,677	0.62 - 2.72	275 - 3,316
4	333 - 772	290 - 1,292	0.60 - 1.21	623 - 2,064
5	483 - 1,477	498 - 3,124	0.33 - 0.97	981 - 3,597
6	540 - 1,639	367 - 1,589	0.92 - 1.47	907 - 3,316
7	349 - 501	278 - 304	1.26 - 1.65	627 - 805

Average Reporting
Area for:

Central District	493	551	0.89	1,043
Southern District	331	300	1.10	631
Northern District	285	285	1.00	570

(a) Part I Incidents: homicide, forcible rape, strong-arm robbery, armed robbery, aggravated assault, burglary, grand theft (over \$200), petty theft (\$200 or less), auto theft, purse snatching.

(b) Part II Incidents: non-aggravated assault, arson, forgery and counterfeiting, fraud and embezzlement, receiving stolen property, carrying weapons, sex offenses (except rape), narcotics, gambling, offenses against family and child, malicious mischief, violation of liquor laws, disorderly conduct, drunkenness, drunk driving, traffic violations, other miscellaneous crimes.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department.

Subarea 5, Tenderloin Subarea

The Tenderloin Subarea experiences the highest crime rates of the Downtown C-3 District study area. As indicated by the low Part I / Part II ratios in Table IV.F.2, the overwhelming majority of these incidents tend to be crimes such as non-aggravated assault, disorderly conduct, drunkenness, malicious mischief and prostitution. Part I crimes also occur frequently, however. Reporting areas overlapping Subarea 5 have the highest incidence of homicide, rape, robbery, aggravated assault and residential burglary in the Central, Northern and Southern Districts.

Subarea 6, Union Square West Subarea

Subarea 6 experiences the highest rates of commercial burglary in the C-3 District study area, as well as in the Central, Southern and Northern Districts. It also has the highest rates of petty theft (which includes shoplifting of items worth \$200 or less) and purse snatching in the three Districts. As shown in Table IV.F.2, the overall crime rates for this subarea are second only to those of Subarea 5 in the C-3 District study area.

Subarea 7, Chinatown Subarea

Theft and residential burglary are the most frequently reported incidents in Subarea 7. The rates for these incidents, however, are typical of those for the Central District as a whole. The overall crime rates for this subarea are below that for the average Central District reporting area, and are comparable to those in Subareas 1 and 2.

FIRE

Firefighting personnel in the San Francisco Fire Department are assigned to Stations throughout the City as members of specific task units. These task units are engine companies, truck companies, rescue squads, and specialty units (fireboat, service squad, searchlight unit, utility unit, air compressor unit, and airport companies). The City is divided into ten Battalion Districts; a Battalion Chief assigned to each Battalion District supervises all units stationed in that District. The Battalion Districts are divided into

three Divisions; a Division Chief assigned to each Division supervises the Battalion Districts it contains. Non-firefighting personnel in the Fire Department are assigned to bureaus: Suppression (Bureau of Training), Prevention (Building Inspection), Investigation, Support Services (Bureau of Equipment) and Administration (Personnel Center, Communications Bureau, Management Services).

Firefighting units throughout the City are staffed uniformly. Engine companies have one officer and three firefighters on-duty, 24 hours a day; truck companies have one officer and five firefighters; rescue companies have one officer and three firefighters; divisions and battalions have a chief officer and a chief's aide. In order to maintain these staffing levels, 15 to 18 people are assigned to each engine company; 17 to 20 are assigned to each truck company; and 17 are assigned to each rescue squad. Forty-one engine companies, 18 truck companies and two rescue squads serve the City.

The type of Fire Department response varies with the type of incident. Three engine companies, two truck companies, one rescue company, one Division Chief and one Battalion Chief respond to first-alarm fires. Back-up units are called in as needed. Non-fire incidents/13/ are frequently responded to by a single engine company, truck company or rescue squad. Although units are primarily responsible for responding to incidents in their immediate area, they are often called into other areas as back-up units.

Table IV.F.3, lists the units primarily responsible for serving the C-3 District study area. Also shown are the subareas which receive first-level response from each unit, as well as the percent of its total service time and the percent of its total incidents each unit spent in the C-3 District study area in 1982. The average response time to any incident in the C-3 District study area is about three minutes.

Units throughout the rest of the City occasionally respond into the C-3 District. None of these units spent more than five percent of their annual service hours in the C-3 District in 1982. The entire firefighting division of the Fire Department (excluding the specialty units) spent 18% of its total service hours in 1982 responding to incidents in the C-3 District study area.

Table IV.F.4 shows the total number of fire and non-fire/13/ incidents in the City as a whole and in the C-3 District study area. The small increase in fire incidents in comparison with the increase in non-fire incidents projected to occur between

IV. Environmental Setting

1982 and 1984 is due largely to the fire-resistive construction of new buildings in the Downtown area (see Appendix K for fire and non-fire incidents at sample addresses, and resulting projection factors). Older buildings, typically constructed of wood and masonry, have had a greater demand for Fire Department Service than have the newer (and generally larger) steel-reinforced concrete buildings, which have replaced them in the Downtown area. In addition, all new buildings are required to be constructed in conformance with the Life Safety Provisions of the San Francisco Building Code; all new buildings over 75 feet tall are required by California Administrative Code Titles 24 and 25 to have sprinkler systems and smoke detection systems throughout. Non-fire incidents, such as first aid calls, resuscitations and false alarms/13/, tend to rise with increases in population, and are less dependent on building construction.

NOTES - Community Services

- /1/ According to the San Francisco County Solid Waste Management Plan Final Draft of September 8, 1982, page 95, the City and County of San Francisco produced about one million tons of solid waste in 1981. About 200,000 tons were construction/demolition debris delivered to locations other than the Transfer Station, 1,700 tons were hazardous wastes and 60,000 tons were sewage residues. The balance, 688,000 tons, was disposed of either by recycling (131,000 tons) or by landfill (557,000 tons).
- /2/ M. Conte, President, Golden Gate Disposal Company, correspondence of January 21, 1983. This letter is available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, San Francisco.
- /3/ City and County of San Francisco, September 8, 1982, op. cit., p. 31.
- /4/ Ibid, p. 12.
- /5/ Ibid, pp. 84-90.
- /6/ Final Environmental Impact Report for Resource Conversion Center (State Clearinghouse No. SCH 79051401), prepared for the City of Brisbane, California, June 1980.
- /7/ The Police Department is installing a computer dispatch system, planned to be operational in August 1983, which would track how much officer time is spent responding to incidents within specific radio car sectors as well as at specific addresses. Until the computer is operational, the Department has no systematic way of tracking officer time by area or by incident. Captain Kevin J. Mullen, Commanding Officer, Staff Inspection Division, personal interview, December 23, 1982.
- /8/ Based on a sample of calls monitored by San Francisco Police Department Communication Room Personnel over one month (February, 1983).

TABLE IV.F.3: FIRE DEPARTMENT UNITS PRIMARILY RESPONSIBLE FOR THE C-3 DISTRICT

<u>Station and Units</u>	<u>Subareas Receiving First Response</u>	<u>% Unit's Service Time In C-3 District</u>	<u>% Unit's Incidents In C-3 District</u>
Station No. 13 530 Sansome St.			
Engine Co. 13	1	55.0	51.1
Truck Co. 13	1	45.6	38.7
Division 1	1-7	52.7	46.9
Station No. 1 416 Jessie St.			
Engine Co. 1	4,5,6	72.5	73.4
Truck Co. 1	4,5,6	66.9	64.9
Rescue Co. 1	1-7	57.8	59.5
Station No. 2 1340 Powell St.			
Engine Co. 2	1,7	29.8	30.6
Truck Co. 2	1,7	17.8	17.5
Battalion 1	1,7	38.5	33.2
Station No. 41 1325 Leavenworth St.			
Engine Co. 41	5,7	16.1	16.6
Station No. 3 1067 Post St.			
Engine Co. 3	5	33.3	34.1
Truck Co. 3	5	36.7	36.2
Station No. 36 109 Oak St.			
Engine Co. 36	3,4,5	24.8	26.8
Battalion 2	3,4,5	27.3	27.3
Station No. 8 36 Bluxome St.			
Engine Co. 8	2,3	24.6	31.9
Truck Co. 8	2,3	28.3	33.0
Battalion 3	2,3	52.7	55.4
Pier 22-1/2 Engine Co. 35	1,2	37.8	34.2

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

TABLE IV.F.4: FIRE AND NON-FIRE INCIDENTS IN THE CITY AND C-3 DISTRICT STUDY AREA

	Annual Incidents		
	<u>Fire</u>	<u>Non-Fire</u>	<u>Total</u>
1982 City Total	6,312	29,269	35,581
1982 C-3 District	1,281	6,293	7,574
% C-3 District	20.3%	21.5%	21.2%
1984 C-3 District (projected)	1,283	6,354	7,637

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

/9/ Part I incidents: homicide, forcible rape, strong-arm robbery, armed robbery, aggravated assault, burglary, grand theft (over \$200), petty theft, auto theft, purse snatching.

Part II incidents: non-aggravated assault, arson, forgery and counterfeiting, fraud and embezzlement, receiving stolen property, carrying weapons, sex offenses (except rape), narcotics, gambling, offenses against family and child, malicious mischief, violation of liquor laws, disorderly conduct, drunkenness, drunk driving, traffic violations, other miscellaneous crimes.

/10/ Based on statistics contained in San Francisco Police Department, Annual Report, 1981-82, September 3, 1982.

/11/ The Mission District holds third place with 17,693 reported incidents in 1981-82.

/12/ San Francisco Police Department, "Incidents for which a Police Report Was Made by District, Plot and Crime, January to December, 1982."

/13/ Non-fire incidents include: false alarms; rescue calls (resuscitation, first aid, person(s) trapped in elevators or autos, landslides, aircraft incidents and drownings); overpressure calls (steam pipe ruptures, gas pipe ruptures, water heater ruptures); hazard calls (gas/oil spillage, explosives removal, downed power lines, electric short circuits, natural gas leaks, building collapses); service calls (lock out/lock in, water removal, animal rescue, assist police, broken hydrants, sinking boats, broken sprinklers); and other miscellaneous incidents.

G. FISCAL FACTORS

MUNICIPAL FINANCES IN SAN FRANCISCO

The C-3 District plays a role in citywide finances. An understanding of the importance of various City revenue sources and the allocation of City expenditures provides a basis for evaluating the fiscal contributions of the C-3 District.

The City's general government revenues and expenditures for the 1981-82 fiscal year are shown in Table IV.G.1. The figures include the revenues and expenditures of the City's general fund, special revenue funds, debt service fund, Municipal Railway, and San Francisco General Hospital. Total revenues are broken down by major revenue source, and total expenditures by major City service function. The percentage distribution of revenues and expenditures is illustrated in Figure IV.G.1.

Property taxes, other local taxes, and grants and subventions are the most important sources of municipal revenue for San Francisco. Together they accounted for 74 percent of the City's general government revenues in 1981-82. Grants and subventions (these are state and federal revenues allocated to the City for general and specific uses) constitute the City's largest revenue source. Revenues from grants and subventions represented 33 percent of total City revenues in 1981-82. Revenues from local taxes other than the property tax (including the sales tax, payroll and business taxes, hotel tax, utility users tax, property transfer tax, and parking tax) accounted for the next largest source, representing about 23 percent of total revenues. Revenues from the property tax made up about 19 percent of total City revenues.

Four municipal service functions account for most of the City's expenditures for general government services. The combined expenditures for public protection, social services, community health, and Muni represented 82 percent of City expenditures in 1981-82. The

TABLE IV.G.1: GENERAL GOVERNMENT REVENUES AND EXPENDITURES, CITY AND COUNTY OF
SAN FRANCISCO, 1981-82 FISCAL YEAR (Millions of 1981-82 Dollars) (a)

<u>Revenues</u>		<u>Expenditures</u>	
<u>Source</u>	<u>Amount</u>	<u>Function</u>	<u>Amount</u>
Property Tax	204.2	Public Protection	296.5
Other Local Taxes (b)	244.7	Public Works	46.8
Grants and Subventions	357.8	Social Services	194.8
Licenses, Fines and Penalties	30.6	Community Health (d)	195.9
Interest and Investment Earnings	36.1	Culture and Recreation	51.6
Charges for Service (c)	191.2	General Administration	68.9
Other	20.0	Municipal Railway	162.5
		Debt Service	17.6
Total	1,084.8	Total	1,034.6

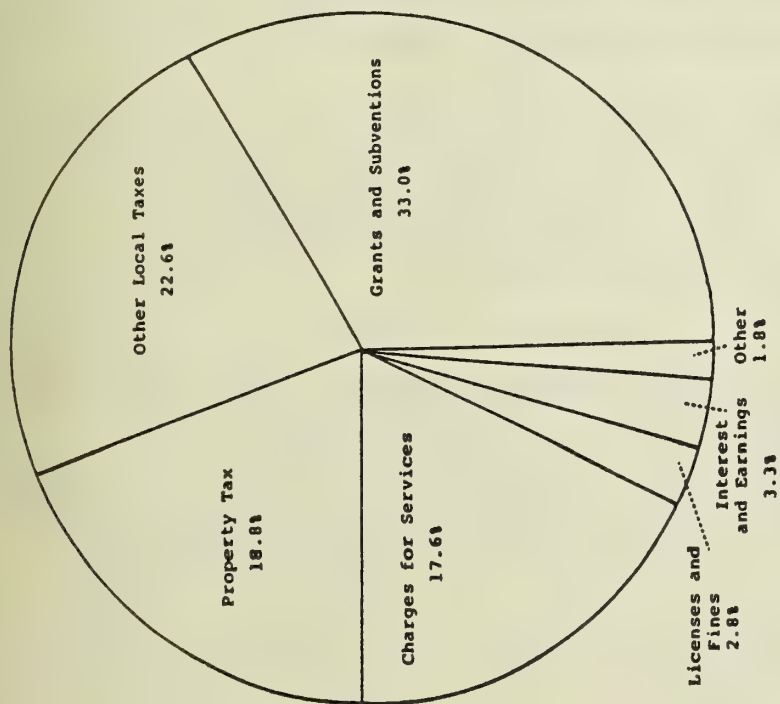
NOTE: Figures may not add to total due to independent rounding.

TABLE IV.G.1: GENERAL GOVERNMENT REVENUES AND EXPENDITURES, CITY AND COUNTY OF
SAN FRANCISCO, 1981-82 FISCAL YEAR (Millions of 1981-82 Dollars) (a)
(Continued)

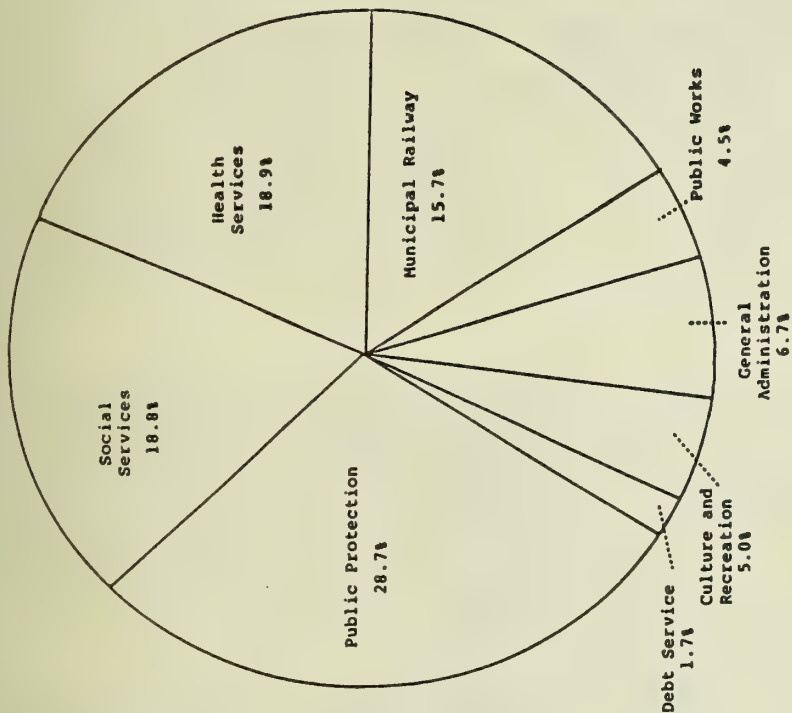
- (a) Includes revenues and expenditures of general, special revenue, and debt service funds. Also includes the operating revenues and expenditures of the Municipal Railway and San Francisco General Hospital, two public service enterprise funds supported in large part by revenue transfers from the City's general fund.
- (b) During the 1980-81 and 1981-82 fiscal years, payroll taxes were collected but not spent pending the outcome of litigation related to the constitutionality of an increase in the payroll tax rate approved by City voters in 1980. A California Supreme Court decision in August 1982 permitted the use of the revenues from the tax increase for general government purposes. The disputed payroll taxes for both 1980-81 and 1981-82 were recorded by the City as revenues in the 1981-82 fiscal year. The figures in Table IV.G.1, however, exclude the 1980-81 payroll tax revenues.
- (c) Revenues collected by the Municipal Railway and San Francisco General Hospital account for 56 percent of total revenues in this category.
- (d) Includes the operating expenditures for San Francisco General Hospital.

SOURCE: Recht Hausrath & Associates, based on Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ended June 30, 1982.

REVENUES



EXPENDITURES



**FIGURE IV.G.1:
DISTRIBUTION OF GENERAL
GOVERNMENT REVENUES AND
EXPENDITURES, CITY AND COUNTY
OF SAN FRANCISCO, 1981-82
FISCAL YEAR**

NOTE: Includes general, special revenue, and debt service funds. Also includes revenues and expenditures for Municipal Railway and San Francisco General Hospital.

SOURCE: Recht Hausrath & Associates, based on Office of Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ended June 30, 1982.

cost of public protection (a category which includes the police, fire, and sheriff's departments, courts, and district attorney) is the City's largest service expenditure, accounting for about 29 percent of total expenditures in 1981-82. Social services and community health (including San Francisco General Hospital) each represented 19 percent of total City expenditures in 1981-82. Together, social services and community health functions made up 38 percent of the City's costs for general government services. The Municipal Railway accounted for about 16 percent of total expenditures.

In addition to the service functions shown in Table IV.G.1, the City provides services which are operated as enterprise funds. Enterprise services levy user charges which, in most cases, pay for the cost of providing the services. Thus, enterprise services typically do not impose a financial burden on the City's general government operations.^{/1/} In fact, some enterprise services produce a surplus of revenues which contribute to the City's general fund.^{/2/} The enterprise funds of the City include the water department and Hetch Hetchy project, the Clean Water Program (sewage collection and treatment), and the San Francisco International Airport.

The financing of San Francisco's government functions has undergone considerable change in recent years. In 1978, the passage of Proposition 13 brought about a sharp drop in the importance of property taxes as a revenue source for the City. In the years just prior to the implementation of Proposition 13, property taxes accounted for about 40 percent of the City's general revenues. Other local taxes accounted for about 20 percent of total revenues, and grants and subventions about 25 percent.^{/3/} After Proposition 13 went into effect, the share of total revenues derived from property taxes fell by about one-half, and the shares represented by other local taxes and grants and subventions grew (see Figure IV.G.1 for the respective shares in 1981-82).

Although revenues from grants and subventions now account for the largest single share of City general government revenues, they are

IV. Environmental Setting

likely to decline in importance in the future. Major state and federal revenue cuts are expected over the next five years./4/ The disappearance of the state budget surplus and the slow growth in state revenues have resulted in reduced state disbursements to local governments. Further cuts are likely. Federal funding programs which benefit cities are also being reduced. State and federal revenues for the City's health and social services have been particularly affected by these funding cuts./5/

Reductions in City revenues from grants and subventions will increase the importance of local revenue sources in future years. Attention will be focused on property taxes, other local taxes, and service charges as sources for major portions of the revenue needed to fund future City government operations.

GENERAL EFFECTS OF C-3 DISTRICT ON CITY FINANCES

The C-3 District, like other areas of the City, is a source of both municipal revenues and expenditures. The economic activity that takes place in the C-3 District generates revenues for the City from a variety of different sources. The C-3 District also requires public services from City departments that result in various costs. These municipal revenues and costs constitute the fiscal effects of the C-3 District on the City.

Several recent studies have investigated the impact of the existing downtown on City revenues and costs. The conclusions of these studies differ, and point to the complexities that govern any assessment of the fiscal contributions of the C-3 District.

Two studies have analyzed the revenue and cost effects of existing development in the downtown area using information reflecting the changed fiscal environment brought about by Proposition 13./6/ These two studies, one prepared by Arthur Andersen & Co. in 1980 and the other by David Jones in 1981, are summarized in Table IV.G.2. Both

TABLE IV.G.2: SUMMARY OF RECENT STUDIES OF THE FISCAL IMPACT OF EXISTING DOWNTOWN DEVELOPMENT

Study, Author, Date	Purpose of Study	Data Sources	Study Methodology	Conclusions
<u>Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980.</u>	To quantify for 1976-77 and 1978-79 how much revenue the C-3-0 area generated and how much it cost to provide City services to the area.	Data compiled from City records and through conversations with City officials.	The study counted only revenues generated within the C-3-0 and costs of providing services to the C-3-0. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-0 generated \$56.79 million in 1976-77, or 61% more than the cost of City services to the area. In 1978-79, after Proposition 13, revenues were \$53.29 million, or 48% greater than costs.
<u>Downtown Highrise District Cost/Revenue Study, David Jones, February 1981</u>	To quantify for 1978-79 the revenues generated by businesses in the C-3-0 and the service costs imposed on the City and BART by the C-3-0.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated by multiplying C-3-0 revenues by the percentage that each City department's budget represented of total City service expenditures, rather than on the basis of actual service demand in the C-3-0.	The C-3-0 imposed costs of \$94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.

NOTE: Both studies analyzed the fiscal impact of existing development in the C-3-0 zoning district, a portion of the entire C-3 District. The C-3-0 is identical to Subarea 1 in this analysis.

SOURCE: Recht Hausrath & Associates, from 101 Montgomery Street FEIR, EE 80.26, May 1981.

IV. Environmental Setting

studies evaluated the fiscal impacts of development in the C-3-0 zoning district, that portion of the C-3 District corresponding to Subarea 1.

Using nearly the same data, the two studies arrived at much different conclusions. The Arthur Andersen study concluded that in 1978-79 the C-3-0 generated revenues 48 percent greater than the cost of City services to the area. The David Jones study concluded the C-3-0 resulted in costs that were 125 percent higher than revenues.

The conflicting conclusions of the two studies are due principally to differences in how each defined and apportioned the City's revenues and costs attributable to downtown development. These differences reflect the lack of an accepted methodology on how to assign revenues and costs, as well as the complexity of the relationships between development in one portion of San Francisco and citywide finances.

The conclusions of any analysis of the fiscal impact of the downtown are strongly influenced by the approach taken to three major definitional questions: 1) whether only direct effects are considered, or both direct and indirect effects; 2) how the causal relationships governing revenues and costs are established; and 3) whether certain equity considerations should influence the distribution of revenues and costs. These questions are discussed below in the context of the C-3 District's contribution to City finances.

The direct fiscal effects of the C-3 District are usually defined as those City revenues and costs that derive from the activity within the District itself. Direct revenues are those revenues that result from property located in the District and from the economic activity that occurs there. Direct revenues include property taxes from C-3 buildings, sales taxes from C-3 retail stores, payroll and business taxes from C-3 businesses, and hotel taxes from C-3 hotels. Direct costs are typically defined as the expenditures required to provide City services to the property located in the District and to the workers, residents, shoppers, and visitors of the area while they are physically within its boundaries. Direct costs include the expenditures for police activities in the C-3

District, for the prevention and suppression of fires in the District, and for the maintenance and repair of C-3 District streets.

Although the definitions of direct revenues and costs appear simple and straightforward, their applications are not. Difficulties in definition affect costs more so than revenues, because the delivery of City services is seldom specific to individual areas of San Francisco. For most City service departments, the C-3 District does not represent a separate and identifiable area of service. Some services are provided to the C-3 District from outside its boundaries (for example, some fire companies that respond to fires in the District are dispatched from stations in other areas).^{7/} For other services, City departments with facilities located in the C-3 District provide services for other areas as well.

The indirect fiscal effects of activities in the C-3 District can include a wide range of impacts. Generally, effects on revenues and service costs elsewhere in the City that are influenced by activity that originates in the C-3 District are considered indirect impacts of the District. For example, indirect effects of the C-3 District can result from downtown workers who travel to adjacent areas like North Beach and Civic Center, from tourists coming to the City for conventions in the District who visit Fisherman's Wharf or Golden Gate Park, or from San Francisco businesses located outside the downtown that service or supply C-3 businesses. Indirect revenues can come from a variety of sources, including the spending of C-3 workers, residents, and visitors in other areas of San Francisco, the taxes paid by City businesses located outside the downtown that depend on economic activity in the District, and property taxes from City homeowners who work in the C-3 District. Indirect costs include the expenditures for police and fire services provided in response to workers or residents of the C-3 District who travel to other areas of the City.

Most indirect fiscal effects are extremely difficult to identify. It is hard to trace the influence of the downtown on other areas of the City and to specify which impacts are due to downtown development and which are the result of other factors. For these reasons, most studies of the downtown area concentrate on identifying only direct fiscal impacts.

To apportion either direct or indirect fiscal effects to the C-3 District it is necessary to make decisions on the causal relationships between C-3 activity and City revenues and costs. Yet, many of these relationships are not clear. For example:

- The C-3 District contains many of San Francisco's largest and best known retail stores. The sales tax revenues that result from purchases at these stores could be attributed to the stores (and to the C-3 District) or to the shoppers, many of whom either reside in other areas of the City or outside the City. Most studies allocate the revenues to the stores.
- Muni ridership could increase because of employment growth in the C-3 District. The costs for Muni could be allocated to the District or to the residents who are riding the buses. Most studies allocate all costs to the C-3 District.

Another definitional question that influences the analysis of the fiscal impacts of the C-3 District is whether equity considerations should play a role in the allocation of revenues and costs. This is important particularly for those City services that are unaffected or only slightly affected by development in the C-3 District. Social services and park and recreation services are common examples. If the C-3 District is responsible for supporting only the costs it creates, then the costs for services unaffected by development there should not be assigned to the District. If, on equity grounds, it is decided that the C-3 District should share these costs with the rest of the City, then a portion of all City service costs should be assigned to the District, whether or not development there has an effect on these expenditures.

The approach taken to each of these three definitional questions can significantly affect the results of a fiscal analysis of the downtown. The conflicting conclusions of the Arthur Andersen and David Jones studies of the C-3-0 area are due largely to differences in how these questions were resolved./8/

Aside from their effects on the conclusions of different studies, these questions illustrate the complexities of the relationship between the C-3 District and City revenues and costs. Although the C-3 District can be viewed as a separate portion of San Francisco with its own service requirements and sources of government revenue, it also influences services and revenues elsewhere in the City.

EXISTING REVENUE CONTRIBUTION OF C-3 DISTRICT

The emphasis of the fiscal analysis conducted in this study is to identify whether additional development and activity in the C-3 District would result in additional City revenue and costs. The analysis does not evaluate the fiscal impact of the existing C-3 District on City finances. Nonetheless, some information is available that provides a rough indication of the relative importance of the C-3 District to City revenues.

Table IV.G.3 shows the share of citywide revenue that is generated by the C-3 District from four major taxes. For the City as a whole, these taxes -- the property tax, the sales tax, the payroll and business tax/9/, and the hotel tax -- made up 37 percent of San Francisco's general government revenues in 1981-82./10/

The C-3 District accounts for a sizable portion of the City's revenues from these four taxes. The District contributes 22 percent of the City's property taxes, 36 percent of the sales taxes, 58 percent of the payroll and business taxes, and 68 percent of the hotel taxes. The large shares represented by the payroll/business tax and the hotel tax reflect the C-3 District's dominance among areas of San Francisco as a location for moderate to large businesses/11/ and as a site for visitor accommodations./12/ The property taxes from commercial property in

TABLE IV.G.3: SHARE OF CITYWIDE TAX REVENUES GENERATED BY C-3 DISTRICT (a)

<u>Revenue Source</u>	<u>Tax Collections from C-3 District as Percentage of Citywide Revenues</u>
Property Tax (b)	22%
Sales Tax (c)	36%
Payroll/Business Tax (d)	58%
Hotel Tax (e)	68%

- (a) The C-3 District's share of citywide tax revenues was computed from tax collections during 1981 to 1982-83. The collection periods vary among the four taxes shown. The notes below identify the collection periods that apply for each tax source. Although the figures shown are not all from the same annual period, they are not likely to misrepresent the C-3's share of citywide tax revenues during the early 1980's. This is because percentage shares tend to change only slightly from year-to-year, even though the absolute amount of revenues may show greater change.
- (b) Based on the net secured assessed value of the C-3 District on 1982-83 assessment rolls as a percentage of citywide net secured assessed value. Net secured assessed value includes secured real and personal property and excludes the value of exemptions (such as homeowners and welfare exemptions). The assessed value of state-assessed property (property owned by utilities such as Pacific Gas & Electric Company, Pacific Telephone, and Southern Pacific) is included. Data on assessed value provided by Assessor's Office, City and County of San Francisco. See Appendix L for more detailed information.
- (c) Based on estimate by Recht Hausrath & Associates of taxable sales in C-3 District in 1981. Estimate is based on information from the State Board of Equalization, the 1977 Census of Retail Trade (U.S. Bureau of the Census, Major Retail Centers, California), the SPUR highrise study (San Francisco Planning and Urban Renewal Association, Impact of Intensive Highrise Development on San Francisco, 1975) and the San Francisco Convention & Visitors Bureau ("1981 Statistics Summary"). For a description of the methodology used to estimate C-3 taxable sales, refer to Appendix L.

TABLE IV.G.3: SHARE OF CITYWIDE TAX REVENUES GENERATED BY C-3 DISTRICT (a) (Continued)

- (d) Based on information provided by the Tax Collector's Office, City and County of San Francisco. The payroll and business tax collections in 1981 from businesses located in the C-3 District were compiled from computerized files. The data included only those collections from businesses that paid more than \$2,500 in annual payroll or business taxes. This was done to account for the change in the small business exemption, effective January 1, 1982, that exempts taxpayers whose computed tax is \$2,500 or less. The C-3 tax collections from businesses paying more than \$2,500 in 1981 was divided by the total collections citywide from businesses paying more than \$2,500 to determine the C-3's share of payroll and business tax collections. See Appendix L for more detailed information.
- (e) Based on estimate by Recht Hausrath & Associates of hotel taxes collected from C-3 hotels in 1981-82. Estimate is based on data provided by San Francisco Convention & Visitors Bureau on number of transient hotel and motel rooms in the C-3 District and average room rates (from San Francisco Lodging Guide, 1982), and hotel occupancy rates from various sources. For a description of the methodology used to estimate C-3 hotel tax collections, refer to Appendix L.

SOURCE: Recht Hausrath & Associates

the C-3 District represent about 45 percent of the non-residential property taxes generated in San Francisco./13/

If the C-3 District's shares of citywide revenues from these four taxes are applied to the total revenues collected from these taxes in 1981-82, the C-3 District would account for 37 percent of San Francisco's combined revenues from the property tax, sales tax, payroll/business tax, and hotel tax./14/ These revenues from the C-3 would be equivalent to about 14 percent of City revenues from all general revenue sources in 1981-82./15/ The actual revenue contribution to the City from the C-3 District is likely to be higher, due to revenues from sources not included on Table IV.G.3 (such as revenue from the utility

users tax, property transfer tax, parking tax, and other sources).

The reader is cautioned that these figures present an incomplete picture of the existing fiscal contributions of the C-3 District. The major sources of direct revenues from the C-3 District are shown in Table IV.G.3. The costs required to provide services are not identified. Yet, Table IV.G.3 serves to illustrate that the C-3 District represents a sizable share of City revenues and an important component of the City's financial structure.

The C-3 District's revenue contribution to citywide finances is particularly important with respect to local revenue sources. Local revenues (such as the property tax, sales tax, payroll/business tax, hotel tax, utility users tax, property transfer tax, and parking tax) are likely to represent a growing share of total City revenues in the future as grants and subventions from the federal and state governments decline. Now, the C-3 District contributes about 37 percent of the City's revenues from the property tax, sales tax, payroll/business tax, and hotel tax. Its share of all local revenue sources could be higher if taxes in addition to these four are considered. As San Francisco's dependency on local revenue sources increases, so too could the District's importance to citywide financial issues.

NOTES - Fiscal Factors

- /1/ Two public service enterprise funds require large contributions from the City's general fund. These are the Municipal Railway and San Francisco General Hospital. Because of their dependency on the general fund these two services are classified in this analysis as general government functions and are included with other general government functions on Table IV.G.1 and Figure IV.G.1.
- /2/ In 1981-82, the Hetch Hetchy project contributed \$17.6 million to the City's general fund (Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 30, 1982).

NOTES - Fiscal Factors (Continued)

- /3/ Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 30, 1982, p. 74.
 - /4/ San Francisco Chamber of Commerce, San Francisco's Strategic Plan, Phase II: Management Summary, September 1982, p. 30.
 - /5/ Ibid., p. 30.
 - /6/ Other studies of the fiscal effects of existing downtown development were completed prior to Proposition 13 or before information on post-Proposition 13 City finances was available. Because of the significant changes in local government finance that resulted from Proposition 13, many of the conclusions of these earlier studies cannot be applied to current situations with much validity. Foremost among these pre-Proposition 13 studies is the SPUR study of 1975 (Impact of Intensive High Rise Development on San Francisco, by San Francisco Planning and Urban Renewal Association, June 1975).
- Still other studies have looked at the fiscal impact of new development in the downtown. These studies have concentrated on analyzing the fiscal implications of additional development rather than on identifying the revenues and costs from the existing downtown. Among these are studies prepared by Gruen Gruen + Associates (Fiscal Impacts of New Downtown Highrises on the City and County of San Francisco, March 1981), by Sedway/Cooke (Downtown San Francisco Conservation and Development Planning Program, Phase I Study, October 1979), and by Recht Hausrath & Associates (Appendix C, in 101 Montgomery Street FEIR, EE 80.26, May 1981).
- /7/ Refer to Section IV.F, Community Services, for additional discussion of the delivery of fire services to the C-3 District.
 - /8/ The two studies differed most significantly on the use of equity considerations as a basis for cost allocation. The Arthur Andersen study included only those costs that were the result of City services provided in the C-3-0 area itself. The David Jones study included a portion of the expenditures of all major City services whether or not these services were actually provided to the C-3-0 area. This was done on the assumption that all City taxpayers should be responsible for a share of citywide service costs, regardless of whether these services are used.
 - /9/ The payroll and business tax is actually two separate taxes: the payroll expense tax and the business tax. The payroll expense tax is a tax on the payrolls of persons and associations doing business in San Francisco. The business tax is a tax on the gross receipts of business activities performed in the City. Taxpayers are required to compute their liability under both taxes, and pay only the higher amount. More revenue is collected

NOTES - Fiscal Factors (Continued)

from the payroll tax than from the business tax; in 1981-82, \$85 million was collected from the payroll tax and \$17 million from the business tax (Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ended June 30, 1982).

- /10/ Based on revenues as shown in Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ended June 30, 1982.
- /11/ The small business exemption of the payroll and business tax excludes many businesses which might otherwise pay these taxes. Businesses whose tax would be \$2,500 or less are exempt under the small business exemption. For businesses that would pay the payroll tax instead of the business tax (this includes most businesses), those firms with total annual payrolls under \$166,667 would qualify for the small business exemption.
- /12/ The number of hotel rooms in the C-3 District represents about 70 percent of the transient hotel rooms citywide. The District's share of total hotel tax revenues (68 percent) is slightly lower than its share of total hotel rooms in the City because the average hotel room rate in the C-3 is lower than the average rate for the remainder of San Francisco hotels. Although the C-3 contains many of San Francisco's most expensive hotels, many of the City's least expensive hotels are also located there. (See San Francisco Convention & Visitors Bureau, San Francisco Lodging Guide, 1982.)
- /13/ Based on the secured assessed value of land and improvements for non-residential property in the C-3 District on the 1982-83 assessment rolls as a percentage of the secured assessed value of land and improvements for non-residential property citywide. State-assessed property is included. Personal property is not included and the value of exemptions is not deducted, since this information is not available by class of property for the City as a whole. Non-residential property consists of all classes of property as defined by the Assessor's Office except apartments, dwellings, flats and duplexes, flats with a commercial store on the ground floor, convalescent homes, and nursing homes. Non-residential property includes many residential hotels. The 1982-83 assessment rolls show the secured assessed value for land and improvements of non-residential property in the C-3 District amounts to about \$4.4 billion, or 44.8 percent of the citywide non-residential property valued at \$9.9 billion (based on information provided by Victor Udalloff, Chief Technical Services, Assessor's Office, City and County of San Francisco).

NOTES - Fiscal Factors (Continued)

- /14/ This is not the same 37 percent mentioned two paragraphs above. There, 37 percent was the share of total citywide general revenues represented by the property tax, sales tax, payroll/business tax, and hotel tax. Here, 37 percent is the share of citywide revenues from the property tax, sales tax, payroll/business tax, and hotel tax that comes from the C-3 District, based on the estimates in Table IV.G.3. By coincidence, the two figures are identical.
- /15/ Based on revenues as shown in Office of Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 30, 1982.

H. URBAN DESIGN

I. ARCHITECTURAL RESOURCES

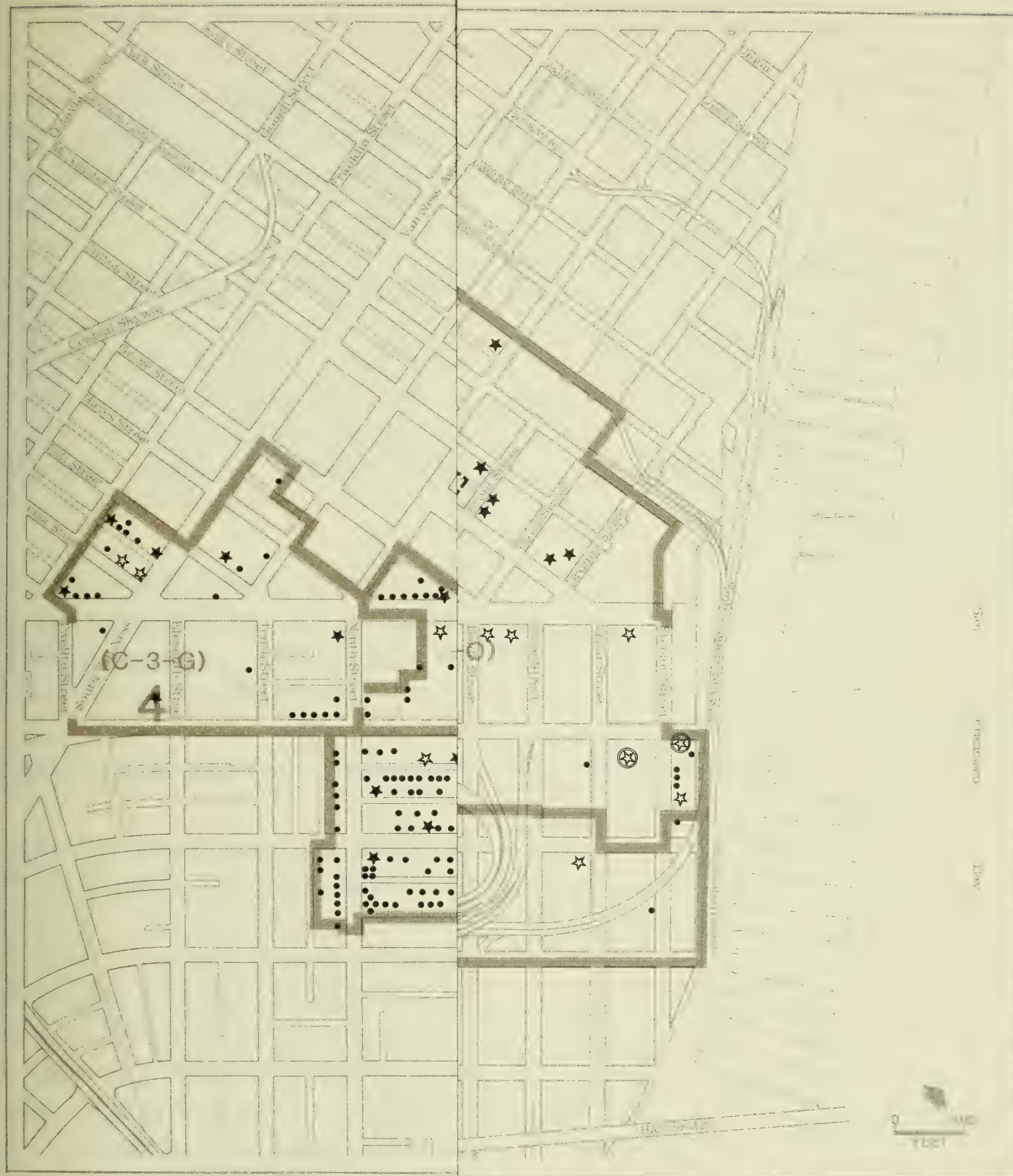
Introduction

San Francisco's architectural resources are the built products of a complex development process which can be described in terms of the City's topography, climate, available building materials, economic history, and outside design influences. These architectural resources are primarily individual buildings of notable design. In recent years, many of these buildings have been demolished to make way for new development. In an attempt to monitor and preserve the City's architectural resources, surveys of buildings in the Downtown District were conducted by both the Department of City Planning (DCP) and the Foundation for the Preservation of San Francisco's Architectural Heritage (Heritage). These surveys catalogued over 1200 buildings in the C-3 District and rated them as to the quality of their architectural design and/or their historic importance. The contents and methodology of these surveys are discussed below.

Surveys of Architectural Resources

Surveys of individual buildings by the DCP/^{1/} and Heritage/^{2/} have identified a total of 1,286 structures as individually significant or contributory architectural resources (see Figure IV.H.1.1). The DCP survey examined all buildings in the City, including those in the Downtown C-3 District. The survey was conducted between 1974 and 1976, and assigned two kinds of ratings to each rated building: (1) an overall rating of architectural appearance and (2) a summary rating that took into consideration the building's first rating as well as its style classification and importance to the streetscape.^{3/} Numerical ratings from a low of "0" to a high of "5" were assigned to each rated building in each rating category. In general, buildings with summary ratings of "3" or higher from the DCP survey are considered by the survey participants to represent approximately the best two percent of the architecture in the City.^{4/}

Heritage has conducted two surveys, which together have examined the entire C-3 District. The first survey, which examined a major portion of the C-3 District, including most of the Central Office District (Subarea 1), was completed in 1979 and is presented in

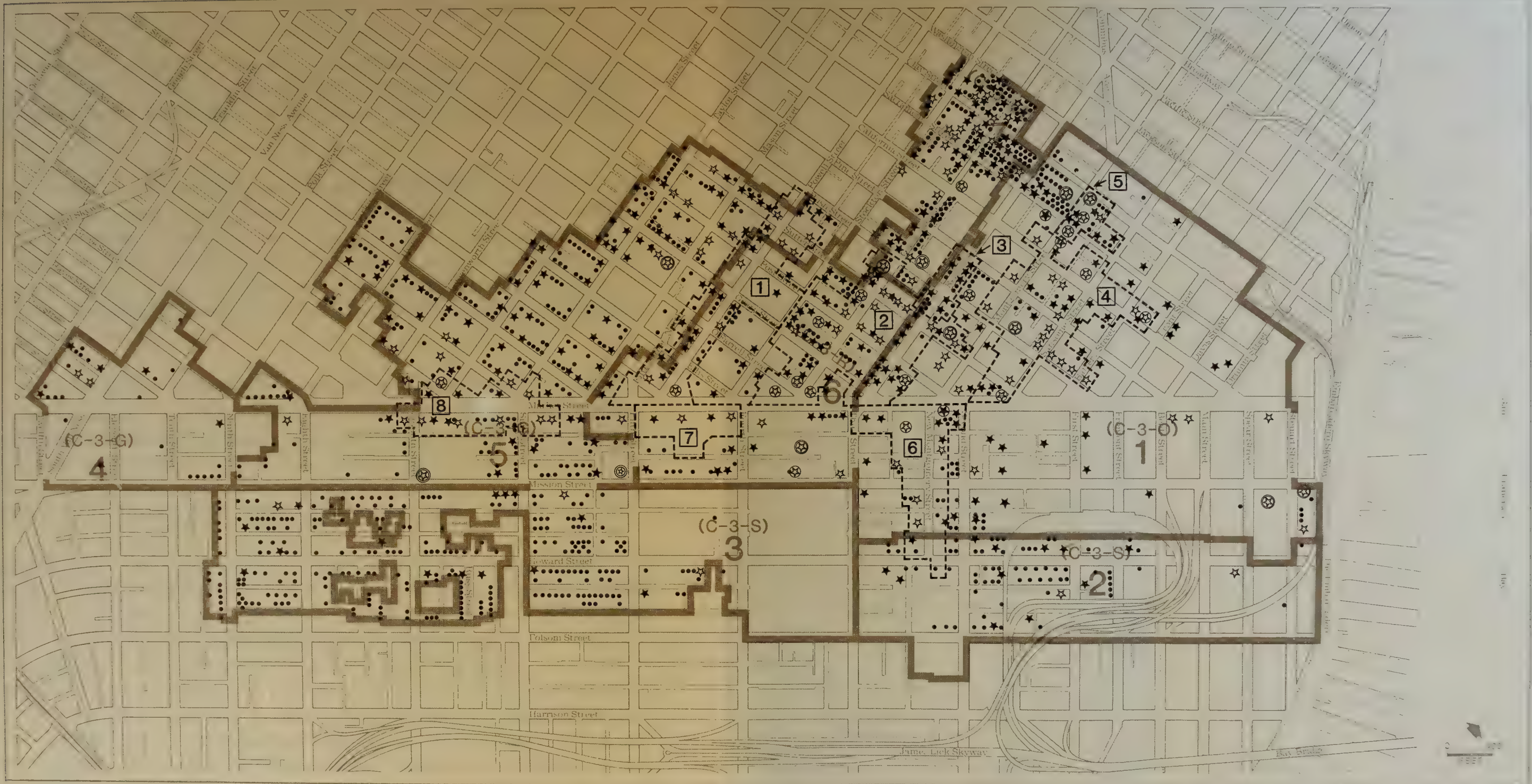


- ☆ HERITAGE A BUILDING
- ★ HERITAGE B BUILDING
- HERITAGE C BUILDING
- ⊙ CITY LANDMARK
- ⊙ NATIONAL REGISTER LANDMARK

NOTE: See Appendix E for definit
Existing Use Districts are s

**FIGURE IV.H.1.1:
DESIGNATED ARCHITECTURAL
RESOURCES IN C-3 DISTRICT**

SOURCE: Roger Owen Boyer and Associates



ELIGIBLE HISTORIC DISTRICTS IDENTIFIED BY HERITAGE

- ☆ HERITAGE A BUILDING
- ★ HERITAGE B BUILDING
- HERITAGE C BUILDING
- ⊗ CITY LANDMARK
- ⊗ NATIONAL REGISTER LANDMARK

NOTE: See Appendix E for definitions of terms.
Existing Use Districts are shown in brown.

- 1 POWELL STREET CORRIDOR
- 2 RETAIL-SHOPPING DISTRICT *
- 3 KEARNY STREET DISTRICT *
- 4 FINANCIAL DISTRICT

- 5 COMMERCIAL-UPPER MONTGOMERY STREET DISTRICT
- 6 NEW MONTGOMERY AND MARKET STREET DISTRICT
- 7 EMPORIUM MARKET STREET DISTRICT
- 8 MARKET STREET LOFT/ THEATER DISTRICT

*National Register Nomination pending.

**FIGURE IV.H.1.1:
DESIGNATED ARCHITECTURAL
RESOURCES IN C-3 DISTRICT**

SOURCE: Roger Owen Boyer and Associates

IV. Environmental Setting

the book entitled Splendid Survivors. The second, or Supplemental Survey, examined the balance of the C-3 District and was completed, as revised, in December 1982. The Supplemental Survey is available from Heritage, but has not been published in book form./2/

Each Heritage survey was conducted using the same methodology (see Appendix E). The surveys assigned a rating of A, B, C, or D to each rated building. An "A" rating indicates a building of highest importance; a "B" rating, a building of major importance; "C", a building of contextual importance; and "D" a building of minor or no importance./4/ Unlike the DCP survey, which examined both old and new buildings, the Heritage survey concentrated on "historic" buildings. Therefore, no buildings built before 1945 were rated in the Heritage surveys.

The ratings and geographic distributions of architectural resources identified in the DCP and Heritage Surveys are shown in Figure IV.H.1.1. The exact location, name, address, rating, Assessor's block and lot number, status, and location of each rated building are presented in Appendix E (see Table E.1 and Figures E.1-E.10).

Distribution of Architectural Resources in the Downtown District

Architectural resources are concentrated in several areas of the C-3 Use District, most notably in and around the Central Office District (Subarea 1). A number of rated buildings are concentrated in the northwestern portion of Subarea 1, an area bounded roughly by California, Washington, Stockton and Leidesdorff Streets. A substantial concentration of architectural resources also occurs in the northeastern portion of the Chinatown District (Subarea 7) in the vicinity of Grant Avenue. Other streets in the Central Office District that have numerous architectural resources include California, Sutter and Bush Streets. The concentration of architectural resources in the Central Office District does not appear as dense as that in Chinatown, since buildings in the former district are generally larger.

Another grouping of important architectural resources is on Kearny Street, along the western edge of Subarea 1. A concentration of rated retail buildings of significant architectural character are also located along Maiden Lane from Kearny Street to Union Square (Subarea 6). Another concentration of architectural resources is located in the warehouse area south of Mission Street between First and Third Streets (Subarea 2).

IV. Environmental Setting

Although the largest concentrations of rated architectural resources are found in the above area, many other buildings of architectural importance are located throughout the remaining portions of the C-3 District. These areas generally experienced less extensive rebuilding after the Earthquake and Fire of 1906. The area west of Fifth Street and south of Market Street (Subarea 3) contains a variety of buildings of contextual importance giving it a distinct architectural character. The relatively small Market-Van Ness Area (Subarea 4), south of the Civic Center, has the fewest number (29) of rated structures of any of the seven C-3 District subareas.

Table IV.H.1.1 provides a summary of architectural resources in the C-3 District by subarea.

National Register of Historic Places and City Landmarks

Nine rated buildings in the C-3 District are listed on the National Register of Historic Places maintained by the National Park Service of the U.S. Department of the Interior. National Register Places are considered to be properties of local, state, and national significance. Six of these properties are in Subarea 1 and the balance is scattered throughout the remainder of the C-3 District (see Figure IV.H.1.1)./5/

Six of the nine National Register Properties as well as 23 additional buildings have been officially designated under Article 10 of the City Planning Code as City Landmarks by the City and County of San Francisco. Of this total of 32 buildings that are National Register Places and/or City Landmarks, 17 are located in Subarea 1, eight are in the vicinity of Union Square (Subarea 6), three are in Chinatown (Subarea 7), and four are in the Tenderloin/South of Market (Subarea 5) (see Figure IV.H.1.1)./5/

Historic Districts

Eight districts have been identified by Heritage in Splendid Survivors as eligible for designation as historic districts under the criteria of the National Register (see Figure IV.H.1.1)./6/ Heritage, in cooperation with the State Office of Historic Preservation, is presently preparing a formal National Register nomination for one historic district that would combine the proposed Union Square Retail District and the Kearny Street District (Districts 2 and 3)./3/ The final status of this historic district is pending.

Subarea	TOTAL				HERITAGE RATING (a)						Additional Buildings Rated "3" or Higher by DCP (a,b)	Total A+B+DCP (e)	TOTAL A+B+C+DCP
	National Register Properties only	City Landmarks only	National Register Properties and City Landmarks both	National Register Properties and City Landmarks (c)	Total A	Total B	Total		TOTAL A+B+C				
							Total A+B	Total C					
1	1	12	4	17	47	83	130	111	241	0	130	241	
2				0	2	12	14	65	79	79	1	15	80
3				0	3	14	17	246	263	263	0	17	263
4				0	2	6	8	21	29	29	0	8	29
5	2	1	1	4	28	85	113	229	342	342	2	115	344
6		7	1	8 (d)	25	52	77	71	148	148	1	78	149
7		3		3	22	41	63	117	180	180	0	63	180
TOTALS	3	23	6	32	129	293	422	860	1,282	1,282	4	426	1,286

(a) See Appendix E for definitions of rating scales.

(b) Number of buildings rated "3" or higher by DCP, but not rated by Heritage.

(c) All but one (see (d), below) National and City Landmark are also rated "A" or "B" by Heritage and are shown in the appropriate Heritage Rating column.

(d) The V.C. Morris Building on Maiden Lane in Subarea 6 is a City Landmark, but is not rated by Heritage because it was built after 1945.

(e) DCP's official list of "Architecturally and/or Historically Significant Buildings in the Downtown", Resolution No. 8600, dated May 29, 1980, includes 87 A's, 162 B's and 28 DCP's, for a total of 277 A's, B's and DCP's.

SOURCE: Roger Owen Boyer and Associates

In addition, the San Francisco Landmarks Preservation Advisory Board has formally initiated designation of six parcels fronting the north side of the 100-block of Sutter Street as the "Hallidie Building Block - Retail Historic District."/7/

Trends in Demolition and Preservation

According to Department of City Planning records, approximately 37 A, B and C (or "3" and higher) architectural resources were demolished or partially demolished in the C-3 District between 1978 and October of 1982. This represents a rate of approximately nine rated buildings per year. Of this total, two were National Register of Historic Places Properties or City Landmarks, four others were rated "A" and 13 were rated "B"./8/

Efforts have increased in the past several years to discourage the demolition of rated architectural resources and to encourage harmony between old buildings and new development. In some cases, existing historic buildings have been incorporated into new structures by extensive interior remodeling. Entire floors of old buildings have been removed while the exterior facades of those buildings have been retained. The 456 Montgomery Street building, under construction, preserved the facades of two small on-site banking temples. The resulting design envisions an office building built on top of the older structures. Similarly, the approved Bank of Canton tower would be built on top of the A-rated Subtreasury Building. The new office tower will be set back 16 feet from the older commercial building's facade allowing the latter to function visually as a separate building. The 466 Bush Street Building incorporates Firestation #2, a designated City Landmark, into its site plan. This new office tower would be built around the fire station; and part of the tower would be built on top of the back of the fire station. A condition of approval of the 101 Montgomery Street Building was the preservation of the adjacent B-rated California Pacific Building.

A few new developments attempt to blend harmoniously with existing historic architectural resources. For example, the addition to the First Nationwide Savings Bank accentuates the vertical orientation and proportions of the former building while allowing the composition of the addition to be modern in style. In another example of design which is conscious of adjacent historic buildings, the tower addition to the Bank of California Building repeats the historic building's window patterns and horizontal orientation.

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The trend toward preservation of architectural resources, and their incorporation into new downtown development projects, has occurred mainly through the City's exercise of conditional use and discretionary review procedures (or the developers' anticipation of them), and not as a result of legislated sanctions upon the demolition of architectural and historic resources.

NOTES - Architectural Resources

- /1/ San Francisco Department of City Planning, Map entitled 1976 Architectural Inventory.
- /2/ The Foundation for San Francisco's Architectural Heritage, Splendid Survivors, 1979 (hereinafter, Splendid Survivors), and "Supplemental Survey of the C-3 District," revised, December 1982.
- /3/ The Foundation for San Francisco's Architectural Heritage, Michael Corbett, personal communication, January 7, and April 1, 1983.
- /4/ See Appendix E for a detailed description of the survey and rating system.
- /5/ See Appendix E for discussion of the criteria for designation of landmarks and for the protective characteristics of such status.
- /6/ Splendid Survivors, p. 247.
- /7/ San Francisco Landmarks Preservation Advisory Board Resolution No. 247, and Jonathan Malone, Secretary, memorandum, December 17, 1982.
- /8/ See Appendix E, Table E.4, for a listing of rated architectural resources in the C-3 District demolished between 1978 and October 1982.

2. STREETScape AND PEDESTRIAN AMENITIES

Introduction

The transportation and business functions of the downtown have made its streets the basic determinates of building location, and in some cases building form. The way in which pedestrians use and perceive streets is an important factor in the quality of life downtown. This section describes the qualities of streets and their features in downtown San Francisco, and discusses the physical characteristics of street environments in the seven subareas of the C-3 District.

Pedestrian orientation in a city demands the "expressive qualities that convey the 'feeling' of a street: a sense of ready access, of clear direction and of well-defined boundaries."/1/ The facades and cornice lines of buildings help give streets this definition. As a means for pedestrian orientation, streets often function as continuous channels. The series of breaks in a street (caused by open spaces, deep setbacks, and cross-streets) divide a street into segments. The individual features of buildings and other elements of the streetscape articulate the street's character on a smaller scale. Highrise buildings, for example, both contain and dominate the space of the street. In other cases, where the width of the street is greater than the heights of buildings, the street functions as the major visual element. In most cases, the street space functions as the common shared element in the relations among separate goals: street and house, street and shop, street and work, and street and transit system./2/

In addition to functioning as corridors for pedestrian movement, streets serve as centers for personal activity and communication. Such functions are enhanced when buildings allow for visual contact between their groundfloor windows and the street. Plazas, parks and interior public spaces can also extend the boundaries of the street and create the framework for more intense activity and visual interest. A street so described also benefits from density of pedestrian activity, and in some cases, automobiles contribute to the sensation of liveliness on a street. In most cases, however, automobiles weaken the function of a street as a center for pedestrian activity.

Isolated towers with low site coverage give little definition to a street. If their open spaces are private, they detract from the potential for street activity. Other breaks in

IV. Environmental Setting

the enclosing street such as gas stations and parking lots also diminish the positive qualities of a street for the pedestrian.

The Street Environment in the C-3 District

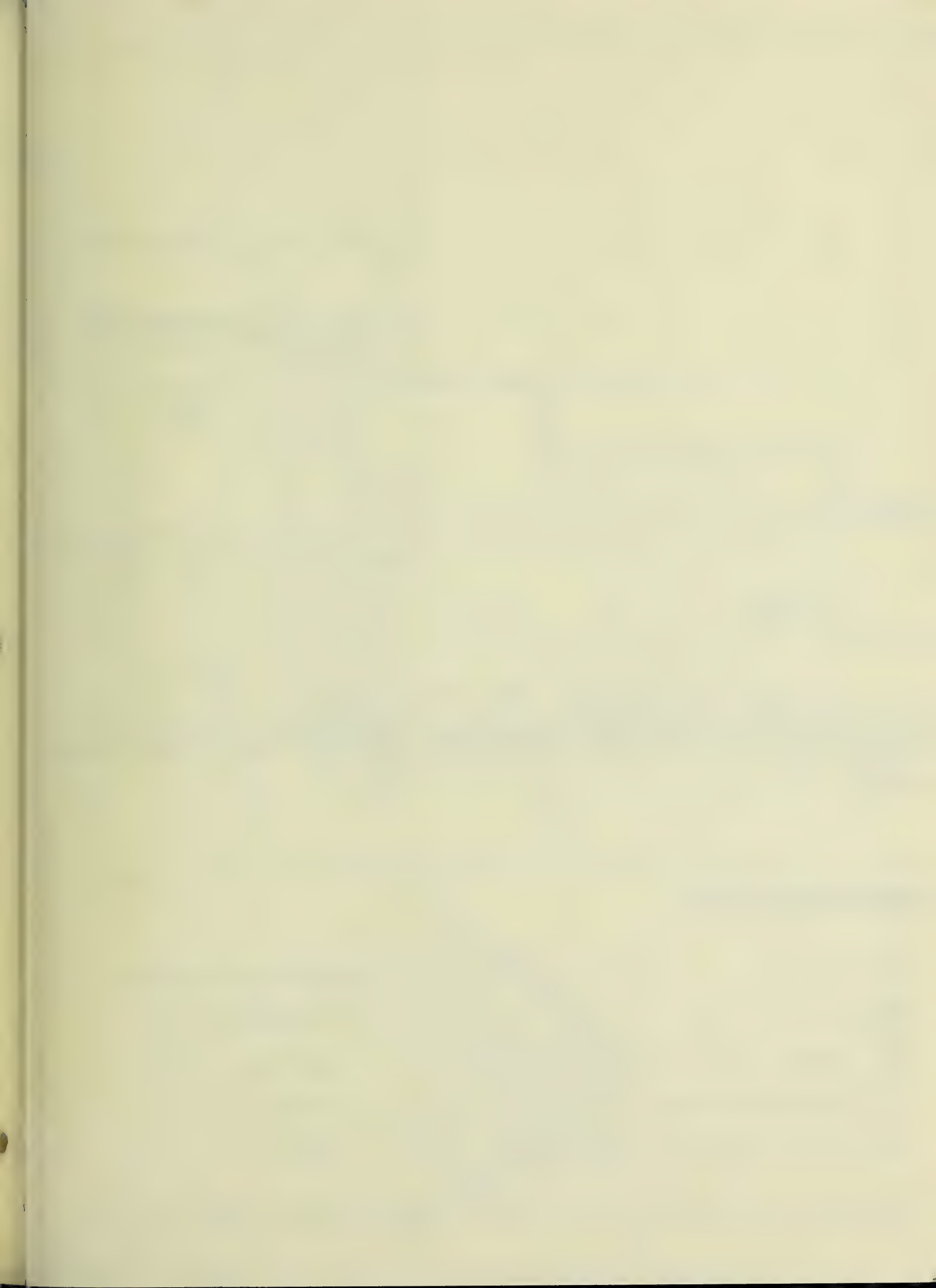
The existing development of downtown San Francisco is represented in the cross-section diagram shown in Figure IV.H.2.1. This figure shows a westerly view from the center of Sansome and Ecker Streets as they intersect various height, bulk and use districts in the C-3 District.

The diagram is a pictorial scale-drawing of existing buildings, including those scheduled to be completed by 1984. To distinguish the distance of the buildings from the viewer, those that front on Sansome and Ecker Streets are outlined with a heavy-weight line and those up to one block beyond are shown with a medium-weight line. All buildings between Sansome and Montgomery Streets, and Ecker and Second Streets are shown. A few major buildings located beyond this area are also shown in a light-weight line. Building details and architectural configurations greater than three feet in their smallest dimension are generally shown; other details are omitted. As shown in Figure IV.H.2.1, the street environment in the C-3 District varies from narrow canyon-like streets lined with tall buildings to wide corridors lined with two-and three-story buildings.

Two case-study locations have been selected from the cross-section (Figure IV.H.2.1) to illustrate common streetscape conditions in the C-3 District. These locations, at the intersection of Pine and Sansome Streets, and the mid-500 block of Howard Street, are emphasized in the following discussions of subareas.

Subarea 1 (Central Office District)

Highrise buildings create a canyon-like effect on Pine Street, which is representative of many streets north of Market Street. Buildings are generally built to lot lines, and most buildings, old and new, have intermediate cornice lines at their first or second story that contribute to pedestrian scale. The feeling of enclosure on Pine Street is accentuated by the visual angle of buildings on Market Street, at the street's eastern terminus. The richness of detail and ornament on older buildings, many of which are architectural



+900'

+800'

+700'

+600'

+500'

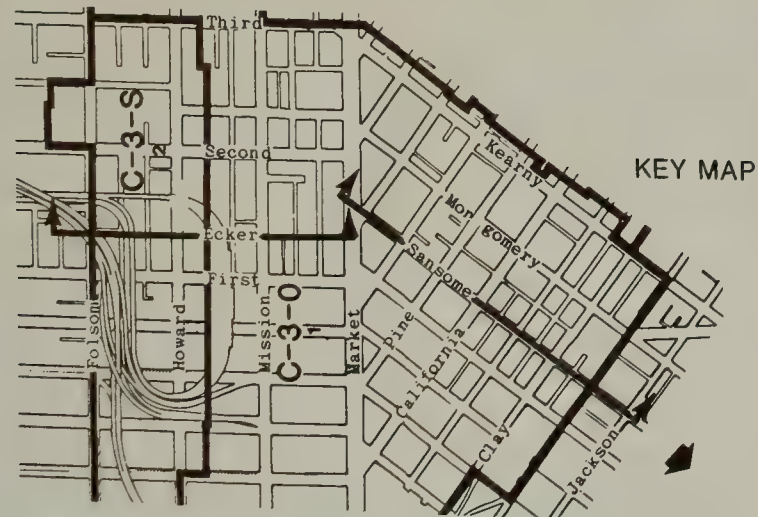
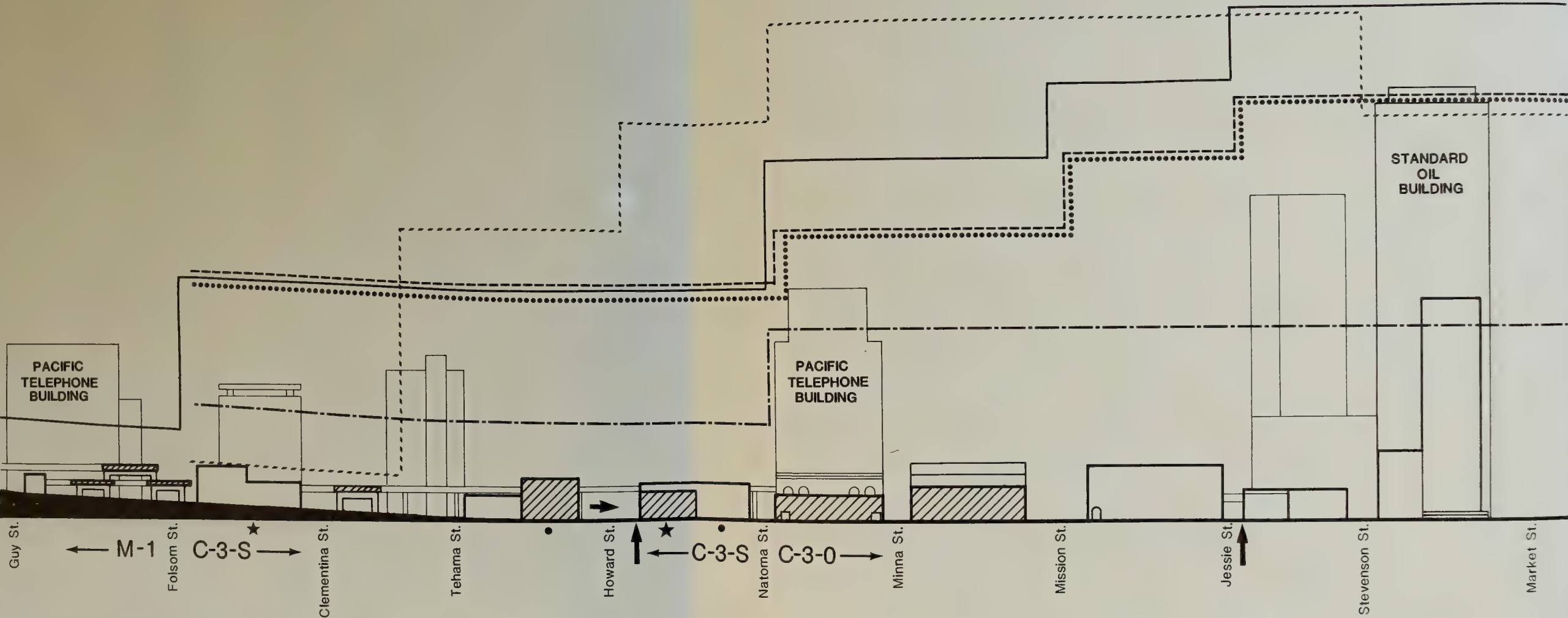
+400'

+300'

+200'

+100'

+0.0'



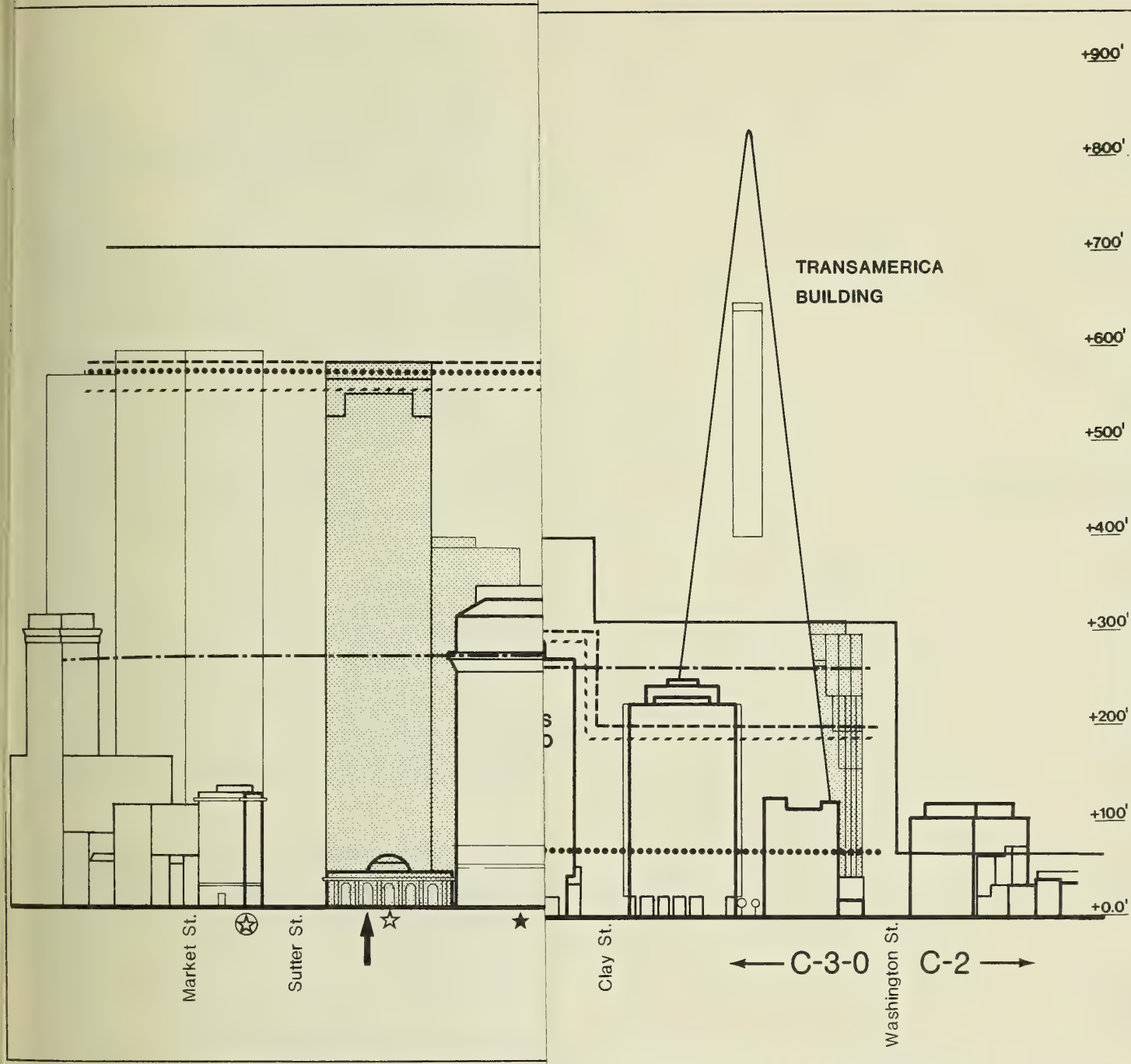
ECKER STREET SECTION (Looking Southwest)

DEPTH OF IMAGE

- BUILDING IN SECTION
- BUILDING AT STREET FRONTAGE
- BUILDING AT DEPTH OF UP TO ONE BLOCK
- BUILDING AT DEPTH OF MORE THAN ONE BLOCK

ARCHITECTURAL RESOURCES

- CITY LANDMARK
- HERITAGE A
- HERITAGE B
- HERITAGE C

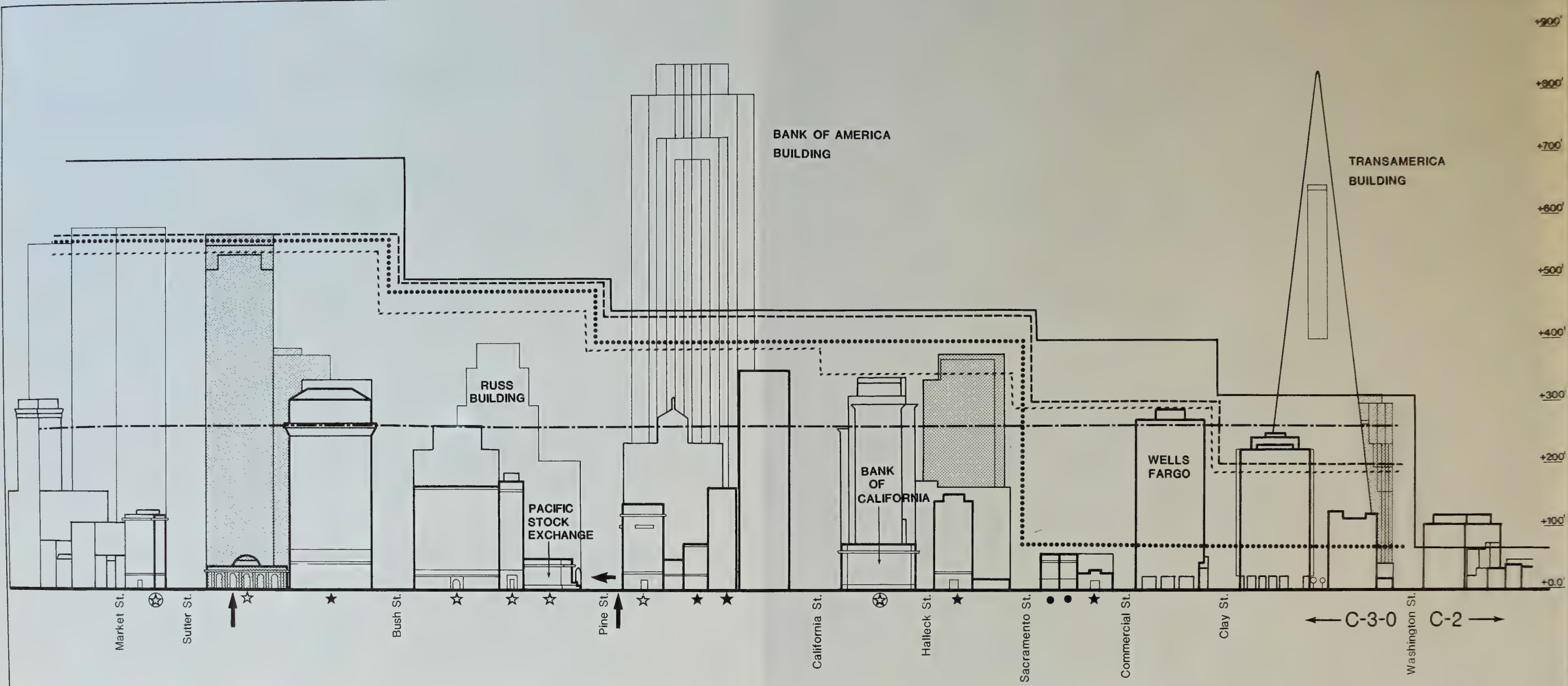


TIME OF BUILDING COMPLETION

- BEFORE 1983
- 1983-1984

FIGURE IV.H.2.1:
C-3 DISTRICT STREETSCAPE, 1984

SOURCE: Roger Owen Boyer and Associates



SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

- BEFORE 1983
- 1983-1984

HEIGHT LIMITS OF ALTERNATIVES

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3
- ALTERNATIVE 4
- ALTERNATIVE 5

PHOTO LOCATIONS

- LOCATION OF STREET-LEVEL PHOTO
(See Figures IV.H.2.2, IV.H.2.3 and V.H.2.7-V.H.2.13)
- LOCATION OF FISHEYE PHOTO
(See Figures IV.H.3.1-IV.H.3.4 and V.H.3.1-V.H.3.5)

**FIGURE IV.H.2.1:
C-3 DISTRICT STREETScape, 1984**

SOURCE: Roger Owen Boyer and Associates

IV. Environmental Setting

resources (see Section IV.H.1), contributes to pedestrian interest and diminishes the visual dominance of highrise buildings.

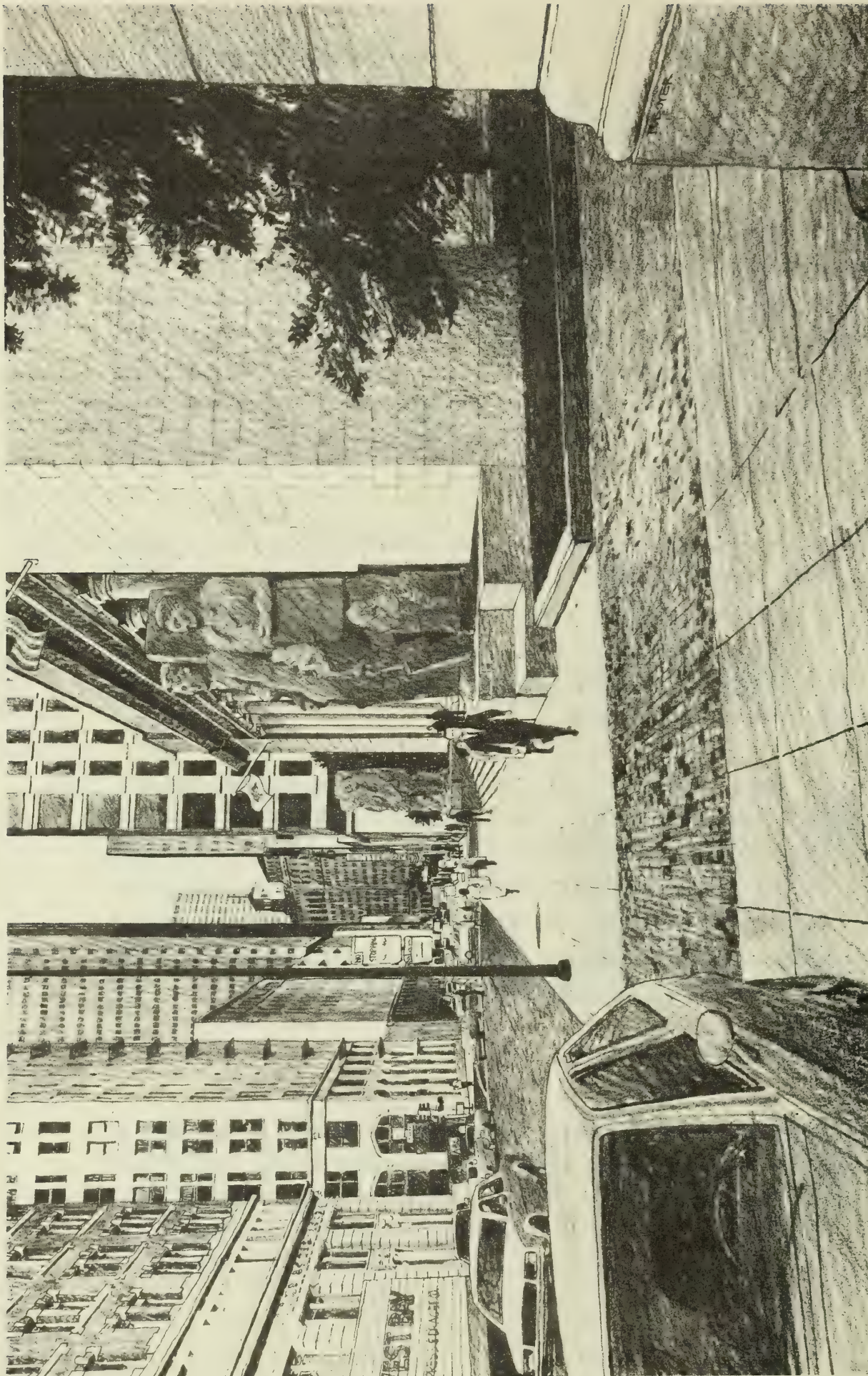
Street level store fronts are generally occupied by financial and banking uses. Pedestrian activity is highest around the noon hour and in the early weekday mornings and late afternoons due to the nearby BART and Muni stops on Market Street. During evenings and weekends, pedestrian activity is relatively low. The few existing restaurants and shops are typically open only during business hours. The street is a major one-way artery (heading west) and traffic is heavy during the workday, particularly at the peak hours when parking is prohibited. At other times, trucks double park in the street and pedestrians jaywalk across Pine Street.

The Pacific Coast Stock Exchange (see Figure IV.H.2.2) is one of the few remaining lowrise buildings on Pine Street. The building, a one-story granite banking temple, has a series of broad steps leading up to a large colonnade which fronts the main trading hall. The entrance to the trading hall is flanked by two monolithic granite sculptures. Due to its location on the south side of Pine Street, and the orientation and height of adjacent buildings, the building receives little sunshine.

Despite its frequently shaded location, the Pacific Coast Stock Exchange contributes to streetscape conducive to pedestrian activity. The north side of the building is setback about 12 feet from the property line along Pine Street, effectively widening the sidewalk. Along Sansome Street and Century Place the building is set back about 15 feet making room for a raised planter where people sit. There are no street trees other than those in the planters. The relationship of the building to its surrounding streets offers an example of how a single building can provide pedestrian amenity in an urban setting.

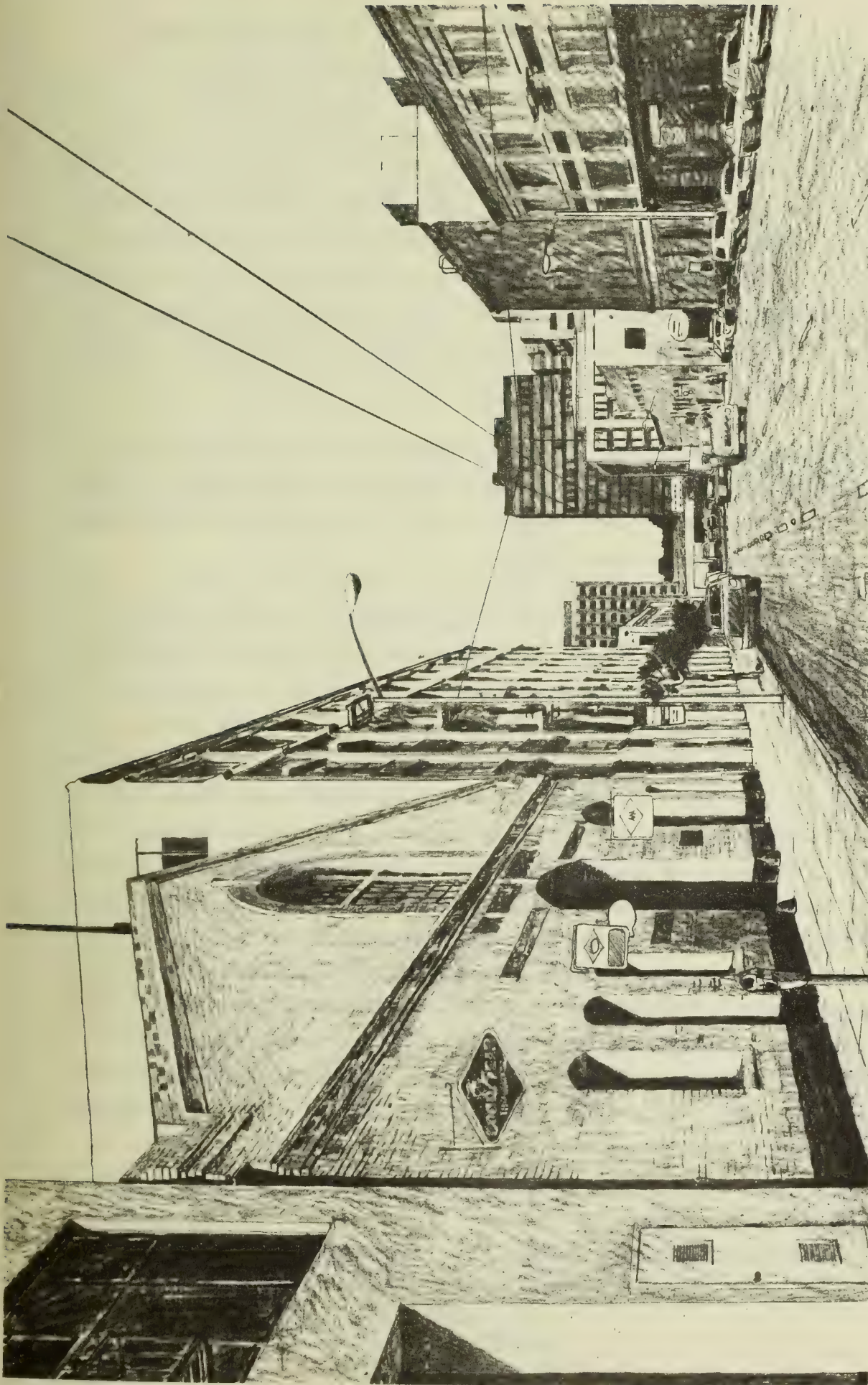
Subarea 2 (East South of Market)

The second urban design case study location is in Subarea 2, on Howard Street South of Market Street (see Figure IV.H.2.3). Howard Street offers a visual contrast in its street environment to that of the Central Office District. In Subarea 2 streets are relatively wide and building heights low, allowing for considerable sunshine. Nonetheless, the streetscape is not generally conducive to pedestrian activity. Howard Street is a



**FIGURE IV.H.2.2:
PINE STREET/ SANSOME STREET
INTERSECTION, 1984**

SOURCE: Roger Owen Boyer and Associates



**FIGURE IV.H.2.3:
522/528 HOWARD STREET, 1984**

SOURCE: Roger Owen Boyer and Associates

IV. Environmental Setting

relatively wide (92 feet in comparison to 69 feet for Pine Street) one-way street heading west and is heavily traveled during the peak hours. Pedestrian traffic is relatively light during the day and negligible at night since there are few commercial or retail support activities in the area. The street is bounded by lowrise buildings (three to five stories) built to property lines, and contains office and light industrial uses. The area is characterized by poorly maintained sidewalks and curbs, driveways cutting across the sidewalks, building entrances without enclaves at the property lines, fire escapes built onto the fronts of buildings, obscuring any lines of architectural continuity, and a variety of types, styles and sizes of buildings.

From the case study location, the view to the west down Howard Street is framed by the freeway overpass leading to the Transbay Bus Terminal. To the east, a freeway overpass leading to the Main Street exit frames a foreground view of new mid-rise office buildings of about 12 stories along Main and Spear Streets.

This section of Howard Street is located in the lowest density area of the C-3 District. The street functions more as a corridor for traffic than as a center for pedestrian activity. The lack of retail uses, open spaces, and the presence of considerable vehicle traffic reduce the pedestrian amenity of the street.

The case study site is occupied by a two-story automobile repair garage, and is located mid-block on Howard Street between 1st and 2nd Streets. The existing building is also shown in the C-3 District cross-section in Figure IV.H.2.1. The building is built up to the property line. The first floor has several openings for automobile doors, pedestrian doors and windows. The low window sills and the doors draw attention to the pedestrian scale of the lower portion of the building. Above, a horizontal cornice marks the second floor and a large, arched, multi-paned window is framed by a pitched parapet with a flagpole at its center. On this south-facing front, shadows articulate the brickwork, and the inset windows and doors create a sense of depth to the facade. The remainder of the front is a painted white plane broken only by the simple, brick detailing of the cornice and parapet lines and several small advertising signs.

The urban design characteristics of streetscapes in much of the balance of the C-3 District may be characterized by reference to the two case study examples described above.

Subarea 3 (Central South of Market) and Portions of Subareas 4, 5, and 6 South of Market Street

Much of the area south of Market Street between Third and Twelfth Streets and Market and Folsom Streets (zoned C-3-G and C-3-S) is similar to the area of the Howard Street case study. The area also has some residential buildings; both existing, older, low-rise buildings along the narrow mid-block streets and newer high-rise residential buildings near Yerba Buena Center. Market and Mission Streets, have office, retail and commercial uses, and a few hotels are scattered toward the Civic Center. Buildings are generally taller (ten to fifteen stories) along Mission Street, particularly to the east. Otherwise the area is comprised of mostly low-rise (two- to five-story) buildings. In this area, the streetscape of Market Street, which has wide brick-paved sidewalks, trees at regular intervals, sitting areas, protected bus stops and intensive retail use, differs most from that of the Howard Street site.

Mission Street approaching Third Street has numerous retail stores and some of the characteristics of the Retail District. Pedestrian activity, however, is generally light, except close to Market Street and the eastern portion of Mission Street. There it is moderate to heavy during the day and weekends, and light at night. Along Market Street, Mission Street, Third Street and Ninth Street, traffic is heavy during the morning and evening peak hours. Unlike the Howard Street site, the majority of the streets in the area do not provide distant views.

Subarea 4 (South Van Ness) North of Market Street

Retail and commercial uses are located in buildings in this area. The group includes some taller (fifteen to twenty stories) structures along Market Street. Pedestrian activity is moderate, compared to that of the Downtown Office District, especially during the evenings and the weekends. Traffic is also typically moderate, as wide streets and a large underground parking garage and other smaller surface parking lots serve to ease congestion.

Subarea 5 (Tenderloin) North of Market Street

The Tenderloin is a mixed use area (C-3-G) located generally north of Market Street to Sutter Street, and between Powell and Larkin Streets. The area shares some similarities

with the Pine Street case study site, but buildings here are generally lower in height (four to 20 stories). Most structures were built before 1945. The predominant land uses are residential and commercial with small retail stores, groceries, bars and various service establishments, and some hotels and theaters to the east along Geary Boulevard.

There are few distant views along the east-west streets, but from Sutter Street the view to the south extends to the South of Market area and beyond. St. Mary's Cathedral is visible along O'Farrell Street looking west past Van Ness Avenue. Pedestrian activity is moderate, but more intense at night in the vicinity of the hotels and theaters, and in the day around Union Square and the Civic Center. Traffic is also generally moderate, but heavier in the areas near Union Square the Civic Center, and along Geary and O'Farrell Street.

Subarea 6 (Union Square) North of Market Street

The retail district (C-3-R) around Union Square has a distinctive urban design character. Building heights (two to 25-stories) are lower than those common in the Central Office District, and the architecture is more varied.

Union Square serves as the traditional focus for the area, reinforced by the recent construction of two major department stores. The predominance of pedestrian-serving retail uses results in a more pedestrian-oriented streetscape. Overhanging awnings, projecting signs, street trees, and frequent store entryways with low-silled, brightly lighted shop windows are more common than elsewhere in the C-3 district. Pedestrian and vehicle traffic are consistently high during the day and occasionally during the evening. There are few distant views along the streets (except along Grant Avenue to the south) but the focal point of the area, Union Square, can be seen from neighboring segments of adjacent streets.

Subarea 7 (Chinatown)

Chinatown has few of the characteristics of the case study sites. The area is located north of Bush Street to Washington Street and between Kearny and Stockton Streets. Chinatown is at a higher elevation than the rest of the C-3 District. Most buildings are two to five stories in height, with several up to ten stories. They are situated along narrow, intensely developed streets. Uses are mixed residential, retail and commercial.

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The streetscape is characterized by narrow sidewalks, a lack of street trees, and a large number of small retail stores, restaurants and service businesses. Buildings commonly have awnings, projecting signs, low-sill display windows and entrances which frequently lead to shops and restaurants on the second floors. The level of pedestrian activity is high during weekdays and evenings, and during the weekends. Crowded sidewalks are characteristic of this densely populated area. Vehicular traffic is generally slow due to the narrow streets and double-parked trucks servicing the retail stores. The narrow streets afford restricted views of the northern portion of the Financial District to the east. Views of the Retail District are available from the southern part of Grant Avenue.

NOTES - Streetscape and Pedestrian Amenities

- /1/ Arnheim, Rudolf, The Dynamics of Architectural Form, (Berkeley, California, 1977, p. 76).
- /2/ Schumacher, Thomas, "Buildings and Streets: Notes on Configuration and Use," (Cambridge, Massachusetts, 1978, p. 145).

3. WIND, SUN AND SHADOW

The pedestrian-level climate within a city differs greatly from that outside the city. The physical and thermal mass of buildings exert a modifying effect on sunlight, temperature, humidity and wind./1/ For pedestrians, these variables determine levels of comfort.

Sunlight

Sunlight patterns within the City are determined by the location of the sun in the sky, the degree and type of cloud cover or fog, and the geometry of nearby buildings. In San Francisco, and throughout the northern hemisphere, the length of shadows cast by buildings is greatest in late fall and early winter, when the sun is lowest in the sky, and least in late spring and early summer, when the sun is highest in the sky. The occurrence of clouds, of course, affects sunlight at ground level. The effect of clouds is often expressed as the "percent of possible sunshine." Table IV.H.3.1. shows the seasonal variation of this factor. Sunshine percentage is at a maximum in spring and in September. It is reduced in winter by clouds associated with storms, and in summer by stratus clouds and fog.

The construction of highrise buildings in downtown San Francisco has steadily diminished the extent and duration of sunshine at street level, and also has reduced the proportion of building surfaces and windows that receive sunlight. The severity of the effect of development on sunlight is roughly proportional to the density of development as measured by average FAR. Within the C-3 District, average FAR and sunlight reduction is greatest in the Central Office Subarea (Subarea 1) and in the Union Square Subarea (Subarea 6). Average FAR and sunlight reduction is least in the East and Central South of Market Subareas (Subareas 2 and 3). The effect of buildings in reducing sunlight has been quantitatively analyzed for this report at four locations. These locations were selected from a cross-section of the C-3 District along Sansome and Ecker Streets (see Figure IV.H.2.) These four locations were selected to meet following objectives:

- to represent a range of urban streetscapes;
- to represent areas that would be affected by future growth; and
- to represent typical locations within the Study Area from which general inferences to the C-3 District may be drawn.

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TABLE IV.H.3.1: SAN FRANCISCO CLIMATIC MEANS

<u>Month</u>	<u>Mean Maximum Temperature°F</u>	<u>Mean Minimum Temperature°F</u>	<u>Percent Possible Sunshine</u>	<u>Average Windspeed (mph)</u>	<u>Prevailing Wind Direction</u>
January	60.0	45.7	56	6.7	north
February	58.9	47.9	62	7.5	west
March	60.1	48.5	69	8.5	west
April	61.2	49.3	73	9.5	west
May	62.5	50.9	72	10.4	west
June	64.5	52.8	73	10.9	west
July	63.8	53.2	66	11.2	west
August	64.8	54.0	65	10.5	west
September	68.8	55.5	72	9.1	west
October	68.2	54.6	70	7.6	west
November	63.2	51.5	62	6.3	west
December	56.8	47.2	53	6.7	north

SOURCE: National Oceanographic and Aerospace Administration, Technical memorandum NWS-WR-126, 1978.

Figure IV.H.3.1 is a view of the sky taken with a fish-eye lens at the Sansome Street/Pine Street intersection./2/ In a fish-eye photograph, the entire sky is included, with the horizon at the outer edge. The path of the sun across the sky and its variation over a year are shown. Those times of the year and times of the day when sunshine reaches the location of the photo and when this location is shaded by buildings are also shown. The time of the day is based on solar time. During the period of late May to late October when Pacific Daylight Time is in effect, the local time is shifted one hour forward (e.g., at 1 p.m. on June 21 the sun's location in the sky is shown at noon solar time).

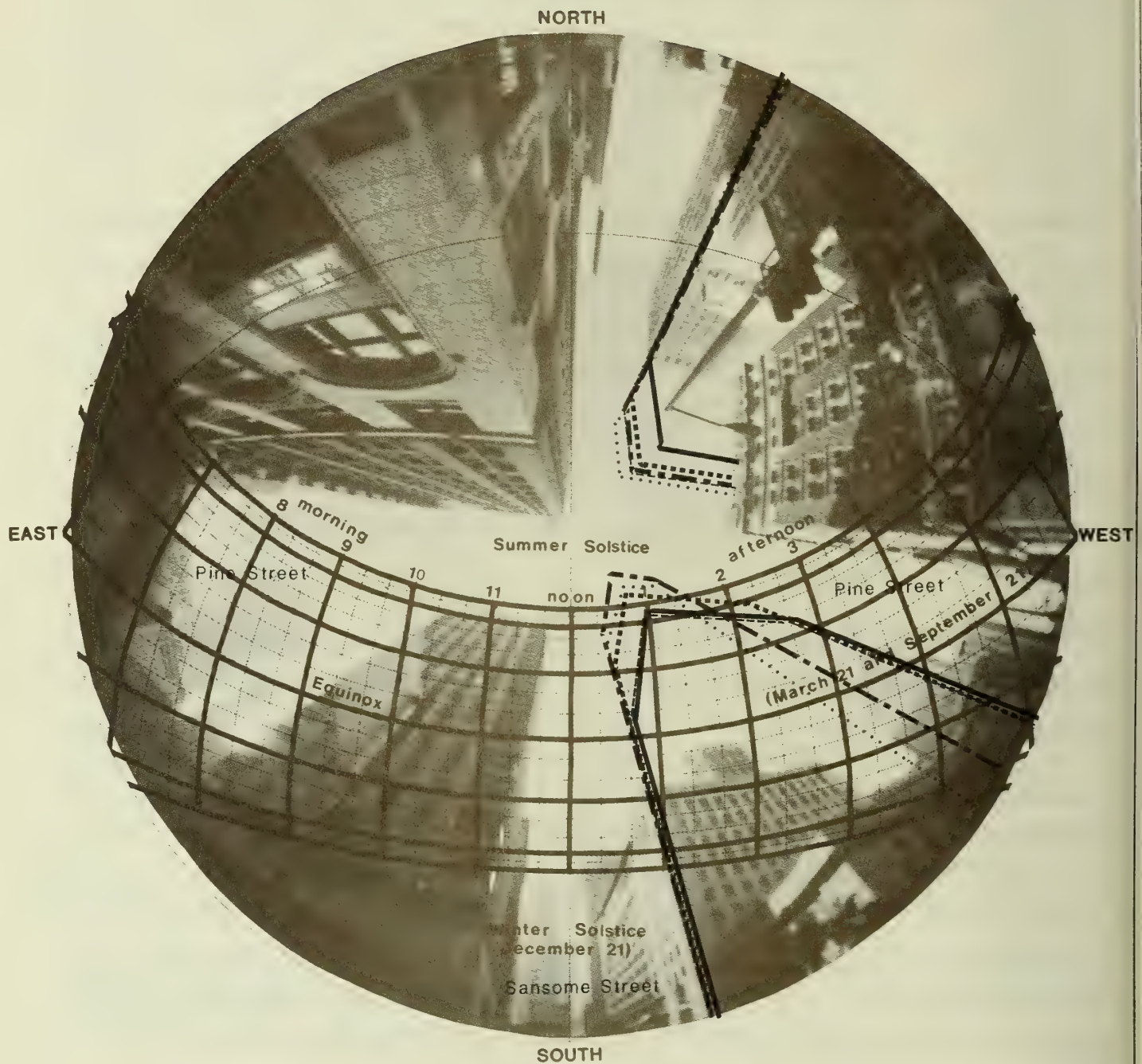


FIGURE IV.H.3.1:

**SUN PATH ANALYSIS, PINE STREET/
SANSOME STREET INTERSECTION, 1984**

SOURCE: Donald Ballanti

NOTE: See Figure IV.H.2.1 for location of photo

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Figure IV.H.3.1 shows that sunlight at the street level is reduced in fall and winter (between the equinox and winter solstice) by existing buildings. In the remainder of the year, some sunshine reaches the street in the morning hours and in the afternoon. The approximate north-south/east-west alignment of streets north of Market Street generally results in sunlight along north-south aligned streets around the noon hour. It should be noted that the Sansome Street/Pine Street intersection receives more sunlight than most intersections in the Subarea 1 Financial District because of the lowrise buildings located immediately to the south.

Figure IV.H.3.2 shows sunpaths at the Crown Zellerbach Plaza. The width of Market Street and the southwest-to-northeast alignment of highrise structures fronting the south side of Market Street result in most of the sunshine occurring in the afternoon. Virtually all the morning sunlight comes through the gap in the buildings caused by the 525 Market Street Plaza. In spring and summer, the plaza received about five hours of sunlight, mostly after 11 a.m. In winter, sunlight is restricted to about one hour in the morning and one hour in the afternoon.

Figure IV.H.3.3 shows sunpaths at the southeast end of the 525 Market Street Plaza, directly across from Ecker Street. Sunlight here is restricted by surrounding buildings to about three to four hours a day in all seasons. Here, the narrowness of Stevenson Street is the major inhibiting factor, because the buildings south of Stevenson Street are only three to four stories in height.

Figure IV.H.3.4 shows sunpaths at the north side of Howard Street (between 522 and 528 Howard). Sunlight duration here ranges from about six hours in winter to eight hours in summer.

Temperature

Mean temperatures in San Francisco are shown in Table IV.H.3.1. The seasonal and daily variation of temperature is typically relatively small due to the moderating effect of the Pacific Ocean and Bay.

A major feature of the urban climate is the "heat island" effect. Urban areas are consistently warmer than suburbs because of the release of heat energy (auto, exhaust,

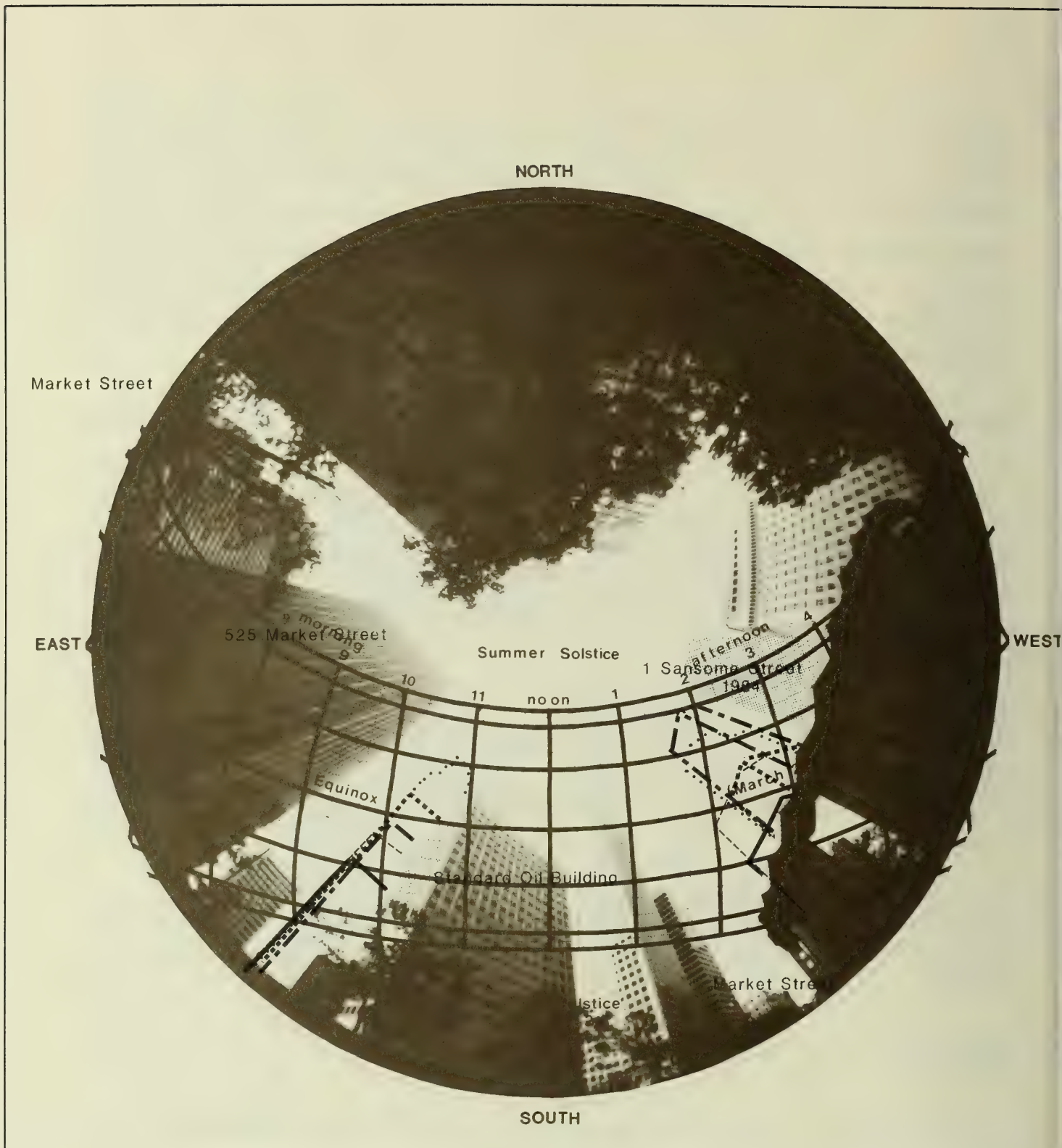
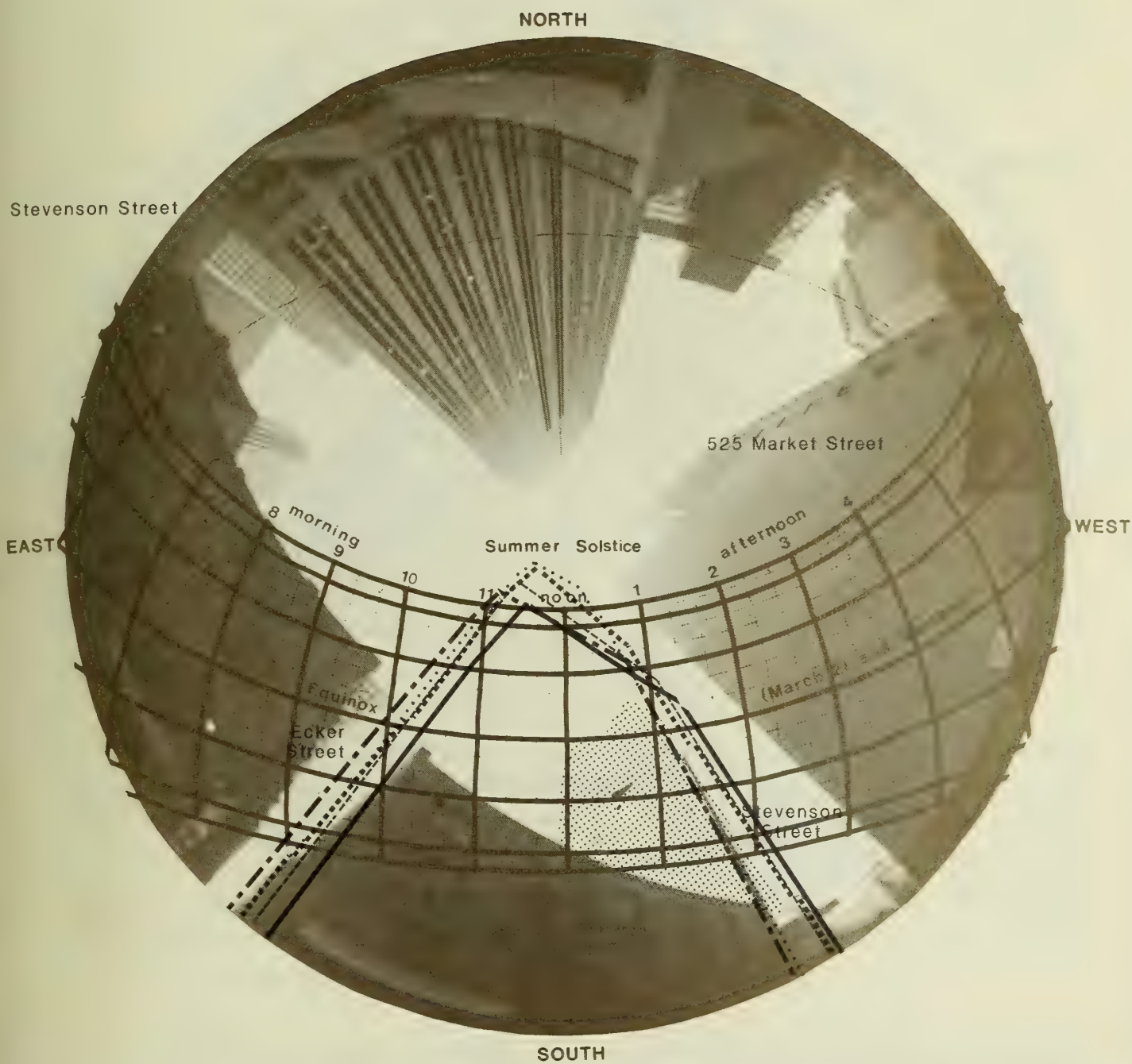


FIGURE IV.H.3.2:
SUN PATH ANALYSIS
CROWN ZELLERBACH PLAZA, 1984

NOTE: See Figure IV.H.2.1. for location of photo.

SOURCE: Donald Ballanti



**FIGURE IV.H.3.3:
SUN PATH ANALYSIS,
525 MARKET STREET PLAZA, 1984**

SOURCE: Donald Ballanti

NOTE: See Figure IV.H.2.1. for location of photo.

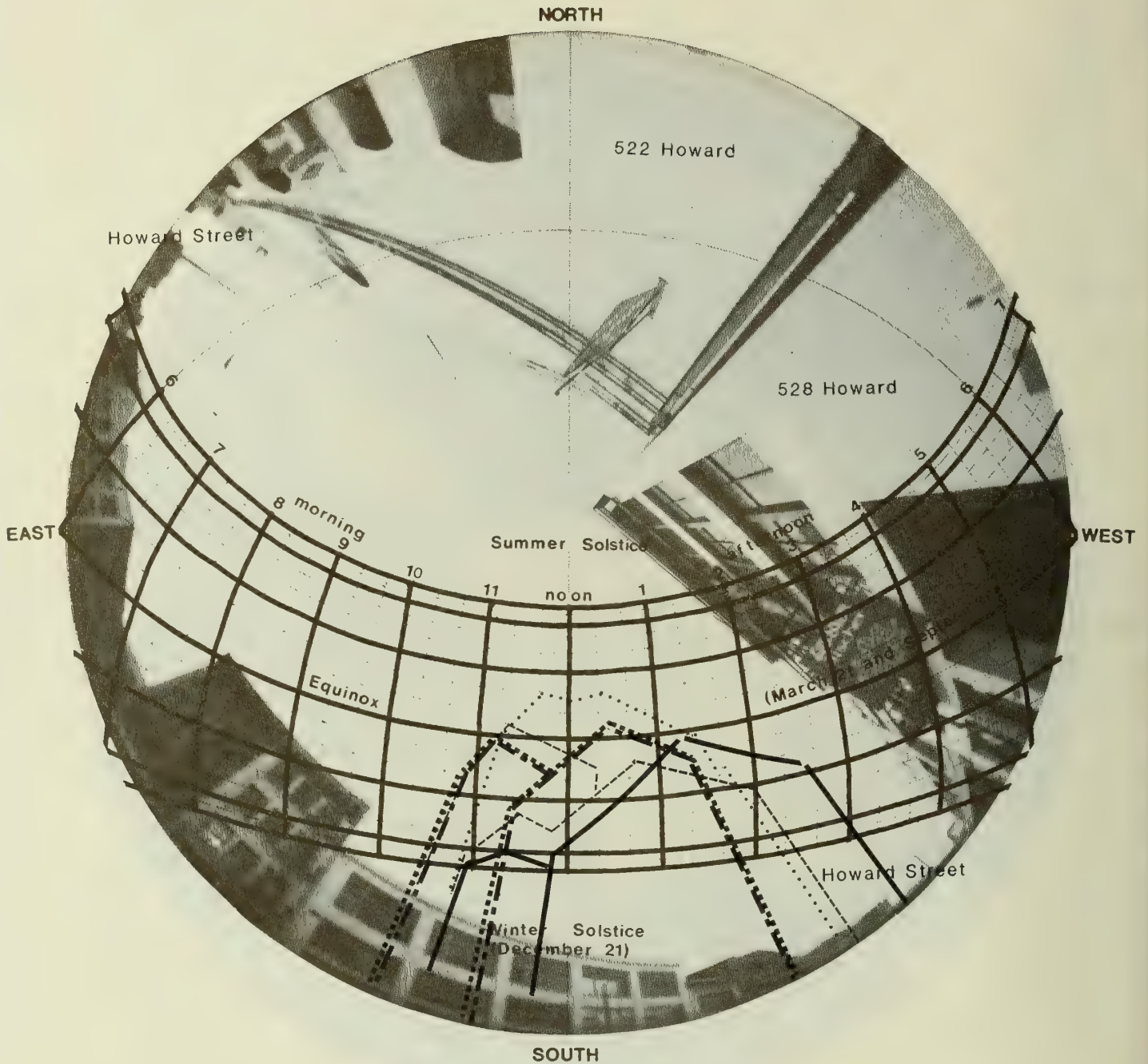


FIGURE IV.H.3.4:
SUN PATH ANALYSIS,
522/528 HOWARD STREET, 1984

SOURCE: Donald Ballanti

NOTE: See Figure IV.H.2.1 for location of photo

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space heating, lights) and the storage of solar energy in the mass of buildings, sidewalks and roads. The heat island effect in San Francisco is less noticeable than in most other cities of similar size because of the overwhelming effect of breezes from the ocean. Heat islands are most noticeable on calm nights./3/ The major effect of the heat island phenomenon is a retardation of nighttime cooling in calm weather, so that minimum temperatures in San Francisco are warmer than in outlying regions within the Bay Area.

The relatively consistent winds found in San Francisco reduce horizontal variation in temperature, so that temperatures within the study area are relatively uniform.

Wind

Average wind speeds and prevailing directions in San Francisco are shown in Table IV.H.3.1. Average wind speeds are greatest in the summer and least in the fall. Winds generally are lowest in the morning hours and highest in the afternoon and evening.

The overall effect of urbanization on winds is to reduce windspeed because of the drag and friction generated by buildings./1/ However, while average windspeeds are lower in urban areas compared to the suburbs, highrise buildings can distort local wind fields dramatically. Near the base of a highrise, winds can be many times stronger than the ambient, undisturbed windspeed.

Several buildings in San Francisco are notorious for the windy, uncomfortable weather around them. Examples are the Fox Plaza, the Federal Building and the U.S. Assessor's Building. These are relatively free-standing, slab buildings that intercept large volumes of moving air. Such designs are known to cause wind accelerations at ground level. Since 1975, the City of San Francisco has required wind tunnel studies of proposed highrises as part of the environmental review process. This policy has at times resulted in design modifications to reduce winds.

North of Market Street the street grid runs approximately east-west and north-south. This results in a pattern of relatively strong winds along east-west streets, where wind is channeled along the street. Along north-south streets there are areas of shelter provided by upwind buildings.

South of Market Street, the street grid runs roughly southwest-northeast and northwest-southeast. This results in relative shelter from the prevailing west wind; but exposure to southwest and northwest winds.

Unlike sunlight effects, the effect of existing buildings on ground-level winds is not directly related to the level of development. Excluding local disturbances in the wind caused by individual structures, average windspeeds decrease somewhat from west to east across the C-3 District, due to the friction effect of buildings.

Pedestrian Comfort

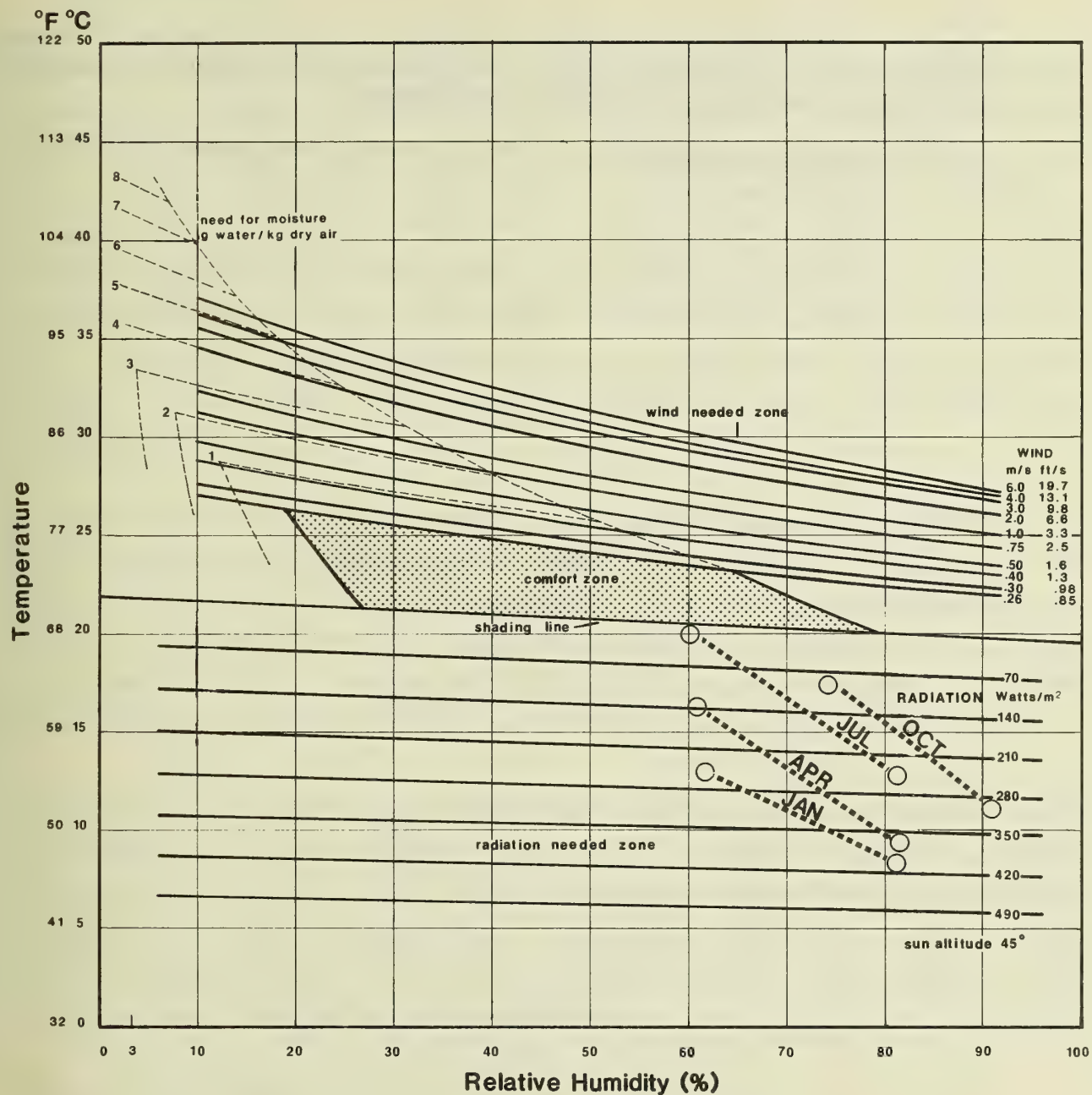
Pedestrian discomfort can be caused by mechanical effects of the wind (buffeting, raising dust, wind-driven rain) or by thermal imbalance (over-heating or over-cooling). In San Francisco, mechanical effects can sometimes cause discomfort during extremely windy conditions. Because of San Francisco's cool weather, however, thermal discomfort is more common, and occurs at much lower windspeeds.

Figure IV.H.3.5 is a comfort diagram for a typically-dressed San Francisco pedestrian. Known as a "bioclimatic chart," it shows a "comfort zone"; combinations of temperature and humidity that result in thermal comfort (in the absence of wind or sunlight). Below this zone, radiation (sunshine) is needed to maintain thermal comfort. Above this zone, wind is needed to maintain thermal comfort. The daily variation of mean temperature and humidity in San Francisco at different times of the year is shown on Figure IV.H.3.5. For a large part of the year, radiation is needed even when there is no wind. The effect of wind is to increase the amount of radiation needed to maintain comfort. The data shown in Figure IV.H.3.5 are for a person walking. Persons sitting generate less metabolic heat and therefore require higher levels of radiation.

Figure IV.H.3.5 indicates the importance of sunshine and shelter from the wind. Locations exposed to the wind and shaded by buildings are seldom comfortable in San Francisco's typically cool temperatures. Pedestrian areas need sunlight and/or shelter from the wind to be consistently comfortable.

NOTES - Wind, Sun and Shadow

/1/ Helmut Landsberg. The Urban Climate (New York: Academic Press, 1981).



NOTE: This chart demonstrates the combinations of climatic factors (temperature, wind, sun and humidity) that produce a climatic "comfort zone" for a typically attired individual on "average" days in San Francisco when the sun is at an angle of 45°. The chart indicates that for such individuals at such times, sunlight is typically required for outdoor comfort.

KEY TO SYMBOLS:

°F = degrees Fahrenheit
°C = degrees Centigrade
g = gram
kg = kilogram
m = meter
ft = feet

FIGURE IV.H.3.5:
BIOCLIMATIC CHART FOR
SAN FRANCISCO

SOURCE: Donald Ballanti

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- /2/ The use of a "fish-eye" lens to obtain an "all-sky" photograph distorts the image severely. While the quantitative information is accurate, the qualitative perception of the amount of sky blocked by buildings is exaggerated.
- /3/ Jan Null. Climate of San Francisco. NOAA Technical Memorandum NWS-WR-126, 1978.

4. SKYLINE IMAGE

Figure IV.H.4.1 shows the skyline of the C-3 Use District as it appeared in November, 1982 from a viewpoint on Potrero Hill, south of the Downtown. The tallest and bulkiest buildings are generally concentrated in the Downtown Office District (Subarea 1). The Bank of America Headquarters building and the Transamerica Building are the tallest structures visible in the figure. Although the overall aspect of the Financial District is of tall, flat-topped, rectilinear office towers, a few older office buildings of more varied styles and scales are also apparent. The Hobart Building and the Standard Oil Building are notable examples of older buildings that remain visible among the newer larger structures. The remaining spaces between buildings also impart visual interest and variety to the skyline.

Between the Central Office District and the Civic Center the rise of Nob Hill is apparent in the middle distance, particularly its western slope. Telegraph Hill, beyond the Financial District, is not visible in Figure IV.H.4.1, but other landmarks including the dome of City Hall, the Golden Gate Bridge, Pacific Heights and the hills of Marin County can be seen to the left. The East Bay can be seen in the distance to the right of the Financial District, but views of the Bay itself are blocked by existing office buildings.

Figure IV.H.4.2 shows the additional visual effect of buildings under construction in 1982 and scheduled for completion in 1984. Note that the completion of structures shown at the right of the figure will further reduce views toward the Bay, East Bay and sky from the photo location, and that completion of the building at One Sansome Street in the central portion of the office district, would reduce sky visibility and the variation in the interface between the sky and the built environment.

A reference key to the skyline photos is shown in Figure IV.H.4.3.



NOTE: See Figure IV.H.4.3 for a reference key to selected existing buildings and buildings to be completed by 1984.



**FIGURE IV.H.4.1:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, 1982**

SOURCE: Roger Owen Boyer and Associates



**FIGURE IV.H.4.2:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, 1984**

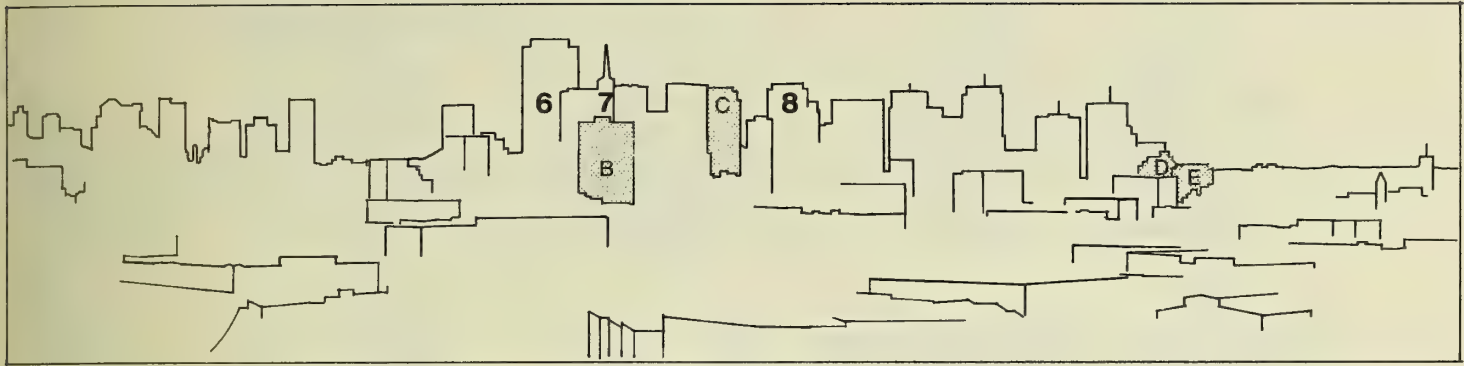
SOURCE: Roger Owen Boyer and Associates



FIGURE IV.H.4.1:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, 1982
 SOURCE: Roger Owen Boyer and Associates



FIGURE IV.H.4.2:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, 1984
 SOURCE: Roger Owen Boyer and Associates



NOTE: See skyline photos, Figures IV.H.4.2 and IV.H.4.3

BUILDINGS EXISTING IN 1982

1. Bank of America Data Center
2. Fox Plaza
3. City Hall
4. Federal Building
5. Hilton Hotel
6. Bank of America Headquarters
7. Transamerica Pyramid
8. Standard Oil Building

BUILDINGS UNDER CONSTRUCTION IN 1982 (1984 SETTING)

- A. 1155 Market Street
- B. Meridian Hotel
- C. One Sansome Street
- D. 101 Mission Street
- E. 150 Spear Street

FIGURE IV.H.4.3:
KEY TO BUILDINGS IN SKYLINE, 1984

SOURCE: Roger Owen Boyer and Associates

V. ENVIRONMENTAL IMPACT

A. LOCAL AND REGIONAL PLANS

A comparison of each of the five alternatives in the way that they respond to the objectives and policies of the San Francisco Master (Comprehensive) Plan, described in Section IV. A, is shown in Table V.A.1. As the policies are broad and general, the comparison in Table V.A.1 is at the same general level of specificity. In some instances, one or more alternatives are presented with precise standards, of which some are presented in Table III. 2, or Appendix B, or within the basic Alternative document.

Table V.A.1 does not contain any regional plan comparison as they are more general than the San Francisco Master Plan policies as they apply to the comparison of alternatives, and no additional comparative impressions could be gained.

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
<p><u>Commerce and Industry:</u></p> <p>1. Objective 6, Policy 1</p> <ul style="list-style-type: none"> - Continued growth of prime downtown office activities so long as undesirable consequences of such growth can be avoided. 	<p>"Downtown San Francisco [is] a center for city, regional, national and international commerce... serving as an employment center for the region."</p>	<p>"As the scale and intensity of downtown development increases, there is a need for a growth management program which addresses the problems associated with growth."</p>	<p>Proposes limit on present "uncontrolled spread of high-rise buildings."</p>	<p>Proposes limit on annual development, reduction of C-3-O area, and reduced FAR and height.</p>	<p>Seeks to "maximize the advantages and minimize the disadvantages" of downtown growth.</p>
<p>2. Objective 6, Policy 2</p> <ul style="list-style-type: none"> - Guide locations to maintain a compact downtown core so as to minimize displacement of other viable uses. 	<p>In the C-3-O district, unrelated uses are excluded in order to conserve the supply of land in the core and its expansion area for further development of major office buildings.</p>	<p>Retains existing C-3-O district boundaries; reduces permitted FAR, height and bulk (see Table III. 2).</p>	<p>Retains existing C-3-O district boundaries; reduces permitted FAR, height, and bulk (see Table III. 2). Prohibits changing any C-3 district to another classification that would allow a more intensive use of the area.</p>	<p>Moves boundaries of C-3-O district inward on north and south, resulting in more compact district. Reduces permitted FAR and height (see Table III. 2).</p>	<p>Retains existing C-3-O district boundaries except on Kearny St. where the C-3-F (Retail) district is extended to the east side of the street.</p>
<p>3. Objective 6, Policy 3</p> <ul style="list-style-type: none"> - Assure that downtown development is compatible with the design and character of San Francisco. 	<p>Permitted FAR and heights are the highest of any districts in the City.</p>	<p>Recommends development of a mandatory design review procedure and guidelines.</p>	<p>As an objective, seeks to avoid a decline in the quality of life in San Francisco.</p>	<p>Reduction of FAR and heights would result in buildings more in scale with the remainder of the City.</p>	<p>Proposes recommendations considered appropriate "for creating buildings in scale and shape more suitable for San Francisco's environment."</p>
<p>4. Objective 6, Policy 4</p> <ul style="list-style-type: none"> - Provide adequate amenities for those who live, work, and use downtown. 	<p>"Certain desirable building features are encouraged by means of development bonuses."</p>	<p>Recommends limits on blank walls, widening of sidewalks, special design treatment to provide pedestrian scale and visual interest, street level retail space, and protection of views. Provides bonus of 10 sq. ft. of floor area per 1 sq. ft. of plaza area.</p>	<p>Permits bonuses for the "improvement of pedestrian environment," but does not describe or specify.</p>	<p>Provides a plaza bonus similar to that of Alternative 2. No recommendations on other amenities.</p>	<p>Recommendations are designed to provide "amenities that make downtown a special place".</p>

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
5. Objective 6, Policy 5 - Control traffic and congestion in the downtown area, particularly from private automobiles.	No parking required; peripheral locations encouraged.	Recommends a transportation system management program (TSM).	Measures for "encouragement of public transit usage" may be adopted but are not specified.	No recommendation.	Implements a "transit-first downtown access policy." Suggests ways to "improve circulation in and around the downtown."
6. Objective 7, Policy 1 - Assure a strong interrelationship occurs between downtown specialty shopping, cultural entertainment, and visitor accommodation activities.	C-3-R (Downtown Retail) and C-3-G (Downtown General Commercial) Districts are contiguous.	No recommendations.	No recommendations.	No recommendations.	No specific recommendations.
7. Objective 7, Policy 2 - Support the continued strength of high quality, specialty retail shopping facilities in the retail core.	C-3-R district is "a regional center for comparison shopper retailing, ... a compact area with a distinctive urban character".	No recommendations.	No recommendations.	No recommendations.	Supports "the continued strength of high quality, specialty retail shopping facilities in the downtown core; extends boundary of the C-3-R (Retail) district into the C-3-O (Office) district on Kearny Street and Belden Street.
8. Objective 7, Policy 3 - Encourage shopper accessibility to the downtown area and physical design amenities at a pedestrian scale which will enhance the pedestrian climate.	"Continuity of retail and consumer uses is emphasized, with encouragement of pedestrian interest and amenities."	No recommendation re shopper accessibility. See No. 4 above re design amenities.	No recommendations re shopper accessibility. See No. 4 above re pedestrian amenities.	No recommendations.	Implement new Master Plan policies regarding pedestrian circulation, such as designating some streets for greater or exclusive pedestrian use, pedestrian networks providing midblock preserving sunlight.

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
9. Objective 10, Policy 1 - Guide the location of additional tourist related activities to minimize their adverse impacts on existing residential, commercial, and industrial activities.	No specific requirements.	No recommendations.	No recommendations.	No recommendations.	No recommendations.
Transportation:					
10. Mass Transit Objective 1 - Give first priority to improving transit service throughout the City, providing a convenient and efficient system as a feasible alternative to automobile use.	Parking not required; discouraged in core, encouraged at periphery. C-3-O, C-3-R, and C-3-G districts shaped by proximity to transit service.	Encourage use of public transit. Investigate feasibility of downtown transportation improvement assessment district.	See No. 5 above.	Provides transportation bonus for special transportation facilities, i.e. public transportation systems, proportional to the additional development costs.	"A 'transit-first' downtown access policy should be vigorously implemented.... New development should contribute to expansion of the local and public transportation systems including supplemental transit shuttle services."
11. Mass Transit Objective 2 - Develop transit as the primary mode of travel to and from downtown and all major activity centers within the region.	See No. 10 above.	See No. 10 above.	See No. 4 above.	No recommendation.	See No. 10 above.
12. Downtown Objective 1 - Maintain the type and level of transportation facilities and services appropriate to enhance the economic vitality of the downtown business and shopping district.	See No. 10 above.	Recommends cost-efficient programs for handling of downtown transportation problems including a Transportation Systems Management (TSM) program and a Transportation Improvement Assessment District.	No recommendations, but seeks to avoid increasing traffic congestion and parking problems.	No recommendations. States that existing transportation networks cannot accommodate the number of people projected to come into the City if the current rate of downtown construction continues.	New development should "contribute funds for maintaining and augmenting transportation service, in an amount proportional to the demand created".

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
13. Objective 1, Policy 2 - Provide needed additional short-term parking facilities in peripheral locations around but not within the downtown core, adjacent to major thoroughfares.	See No. 10 above.	No recommendations.	No recommendations.	No recommendations.	"Require ... new short-term parking be immediately adjacent to, but not in, the core as defined in the Master Plan ... by creating special downtown parking districts."
14. Objective 1, Policy 3 - Discourage the addition of new long-term parking spaces in and around downtown ... and locate long-term parking facilities in areas peripheral to the downtown commercial district.	See No. 10 above. Conditional use required for parking which is not accessory to principal uses.	Long-term single occupant auto commute trips into downtown San Francisco should be discouraged. Employees should be encouraged to use car/pools by having priority parking space available.	No recommendations.	No recommendations.	"Require any needed new long-term parking to be located on the periphery of the downtown C-3 districts and linked to downtown by transit."
15. Downtown Objective 2 - Improve the downtown pedestrian circulation system, especially within the downtown core, to provide for the comfortable, safe and convenient movement of pedestrians.	No specific requirements.	Provide 20% bonus for improved pedestrian access; also provide 40 sq. ft. of floor area for each linear ft. by which walking distance between streets and alleys is shortened. Recommends sidewalk width standards.	No recommendations.	No recommendations.	See No. 8 above. Would implement a pedestrian street plan; provide sufficient pedestrian space by regulating the location of sidewalk structures; require mid-block pedestrian ways and arcades pursuant to a pedestrian network plan.
16. Objective 2, Policy 4 - Create a pedestrian network in the core area which include streets devoted to or primarily oriented to pedestrian use.	No specific requirements.	No recommendations.	No recommendations.	No recommendations.	See No. 15 above.

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
17. Downtown Objective 4 - Improve facilities for freight deliveries and business services.	Number and size of required loading spaces less stringent than Alternative 5.	No recommendations.	No recommendations.	No recommendations.	"Improve facilities for off-street goods delivery in new development so as not to aggravate on-street conflicts between delivery vehicles and other traffic and pedestrian movements. Recommends standards more stringent than present Code.
18. Objective 4, Policy 1 - Require off-street facilities for freight loading and service vehicles in all new developments sufficient to meet the demands generated by the intended uses.	See No. 17 above. Fewer spaces required, loading spaces less stringent than Alternative 5.	No recommendations.	No recommendations.	No recommendations.	See No. 17 above. More space required than in Alternative 1.
<u>Residence (Housing) Element</u>					
19. Objective 1, Policy 3 - Promote the inclusion of housing in downtown commercial development.	Conditional use required in most instances.	No recommendations.	No recommendations.	No recommendations.	Recommends rezoning areas for housing in the Central South-of-Market, Rincon Hill, South Park, South Van Ness, Van Ness Corridor and Mission Bay Areas. The first is in the C-3 study area; the others are adjacent or near the study area.
20. Objective 1, Policy 3 - Promote the inclusion of housing in downtown commercial developments.	No requirement. (OHPP is not in code, but used as a policy guide.)	No recommendations.	Recommends bonus when new housing is constructed on or within 500 feet of a new building (bonus equal to floor area of new housing).	No recommendations.	Provides an FAR bonus for residential or mixed office-residential projects downtown. The additional FAR would be 5:1 in the C-3-O district, 3:1 in the C-3-R district, 4:1 in the C-3-G district, and 2:1 in the C-3-S district.

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
21. Objective 3, Policy 3 - Restrict the conversion of housing in commercial and industrial areas.	No code requirement. (Planning Commission reviews under discretionary authority.)	No recommendations.	No recommendations.	Protect and encourage residential uses adjacent to downtown.	"Protection of both residential hotels and apartment units should be provided either by some form of R/C zoning, a demolition and conversion control ordinance or both."
22. Objective 3, Policy 4 - Preserve the existing stock of residential hotels.	No code requirement.	No recommendations.	No recommendations.	Provides a bonus for transfer of development rights from residential hotels preserved in the same way as meritorious buildings. (See No. 30 below.)	A revision of the C-3-G boundary in the Tenderloin is recommended "to more sharply delineate the edge of commercial downtown and the predominantly residential part of the Tenderloin".
23. Objective 5, Policy 8 - Ensure that office developments ... assist in meeting the housing demand they generate.	See No. 20 above.	Provides bonus.	No recommendations.	Office developers must provide for the substantial rehabilitation of existing housing units or for the construction of new housing units at the rate of 1 unit for every 4 employees in new office development. Affordability of new units must correspond to income levels of new office project occupants; or, developer must pay in-lieu fee (see Table III. 2.).	"Development of new housing (or rehabilitation of long-vacant existing housing) should be required as a condition of approval of all projects containing more than 50,000 sq. ft. of office space at the rate of 640 sq. ft. of housing for every 1000 sq. ft. of office space, and 0.9 units per 1000 sq. ft. of office space. The housing could be provided as part of the office building or on another site.
<u>Urban Design</u>					
24. Objective 3, Policy 1 - Promote harmony in the visual relationships and transitions between new and older buildings.	No code requirements. (Planning Commission reviews under discretionary authority.)	No recommendations.	No recommendations.	No recommendations.	Recommends design standards.

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
25. Objective 3, Policy 2 - Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance.	No code requirement. Considered by Planning Commission in discretionary review.	No recommendations.	No recommendations.	No recommendations.	Specific standards established.
26. Objective 3, Policy 3 - Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations.	Same as No. 25 above.	Recommends mandatory design review and development of design guidelines.	No recommendations. (Recommended FAR and height limits would reduce prominence of buildings.)	No recommendations. (Recommended FAR and height limits would reduce prominence of buildings.)	Specific standards established.
27. Objective 3, Policy 4 - Promote building forms that will respect and improve the integrity of open spaces and other public areas.	Same as No. 25 above.	Recommends reduced bulk, side setbacks on upper floors, and sufficient space between towers "to protect views and ensure adequate sunlight and air". Bonuses provided for plaza areas.	Recommended FAR and height limits would have an effect on retaining existing qualities of open space.	No recommendation, except for bonus for plaza space as in Alternative 2.	Provides sunlight access requirements.
28. Objective 3, Policy 5 - Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.	Height districts established by code allow greater heights than other Alternatives.	Recommends reduced height limits in C-3-O district, ranging from 575 ft. to 240 ft.	Height limits would be no higher than 260 ft. in C-3-O district, 150 ft. in C-3-R, and 130 ft. in C-3-G and C-3-S districts.	Recommends height limits as low as any proposed by other Alternatives except Alternative 3.	Height limits modified and reduced compared with Alternative 1.
29. Objective 3, Policy 6 - Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction.	Established by code in relation to height.	Recommends side setbacks in proportion to lot widths, and bonuses for further reductions in bulk.	Bulk same as Alternative 1.	Bulk measured as in Alternative 1 but; would apply at street level lower height limits affect precise effects.	Bulk standards modified and refined in proposed code amendments.

TABLE V.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND EACH ALTERNATIVE (continued)

MASTER PLAN	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5
30. Objective 2, Policy 4 - Preserve notable landmarks ... and promote the preservation of other buildings and features that provide continuity with past development.	Contains provisions for designating landmark buildings and provides restrictions on demolition.	Permits an increase in floor area for the transfer of unused development rights from designated historic or architecturally significant buildings, and a bonus for preservation of "A" buildings.	Permits an FAR bonus of 50,000 to 100,000 sq. ft. for preservation in perpetuity of designated City landmark or building listed on the National Register of Historic Places if within 500 feet of new project in C-3 district.	Provides a preservation bonus as in Alternative 3.	Provides for transfer of development rights from significant building sites, establishes new Conservation Districts with incentive regulations to preserve designated buildings.
<u>Land Use:</u>					
31. Land in the working areas is classified into four categories: 1) Downtown, 2) Business and Services, 3) Light Industry, and 4) General Industry.	C-3-O Downtown (Office) District extends further south. C-3-S (Downtown Support) District extends further south. Residential classifications are interspersed among nonresidential classifications. Residential uses are encouraged by bonus system.	C-3-O and C-3-S district boundaries are same as Alternative 1. Housing bonus is provided in C-3 districts.	C-3-O and C-3-S district boundaries are same Alternative 1.	C-3-O and C-3-S district boundaries are approximately same as Alternative 1 except for extension of RC (Residential-Commercial) uses in the Tenderloin where RC (Residential-Commercial) uses would be accommodated.	C-3-O and C-3-S district boundaries are approximately same as Alternative 1 except for extension of RC (Residential-Commercial) uses in the Tenderloin and South-of-Market. Residential uses are encouraged by a bonus system

SOURCE: Environmental Science Associates, Inc.

B. LAND USE AND REAL ESTATE DEVELOPMENT

1990 C-3 DISTRICT LAND USE AND REAL ESTATE DEVELOPMENT

The Pipeline

A number of C-3 District projects that would not be constructed until after 1984 are already approved or are in the City's review process./1/ In addition, there is an approved redevelopment plan for the Yerba Buena Center Redevelopment Project Area (YBC), a portion of which is in the C-3 District./2/ These C-3 District projects approved, under formal review, and in the Yerba Buena Center Main Program Alternative are referred to as the "pipeline" projects in this report. Table V.B.1 identifies the amount of new space in pipeline projects, by type of building./3/

The 15.7 million sq. ft. of space in pipeline projects is distributed fairly evenly among projects that are approved, under formal review, and in YBC. Approved projects represent the largest amount of space, 5.7 million sq. ft. Office buildings represent the largest share of space in all three categories, accounting for 63 percent of total space. The next largest share, 18 percent, is space in hotels.

How fast the space in pipeline projects will be built and absorbed is to a large extent determined by the demand for space exerted by businesses. Forecasts of the demand for C-3 District space to accommodate employment growth were prepared as a part of this study./4/ These forecasts indicated that the demand for space by 1990 would be approximately equal to the space that would become available as a result of construction of the buildings in the pipeline./5/ This process of "matching" the demand for space with potential supply accounted for space demolished for new construction, the conversion of some existing space to office use, and the oversupply of newly built space as of 1984 which would be available for occupancy in the 1984-1990 period./6/ The result of these assumptions and forecasts is, therefore, that the

TABLE V.B.1: AMOUNT OF SPACE IN PIPELINE PROJECTS IN THE C-3 DISTRICT BY TYPE OF BUILDING, AS OF MID-1982 (Thousands of Gross Sq. Ft.) (a)

Building Type	Projects Approved but not Under Construction	Projects Under Formal City Review	Projects in Yerba Buena Center (b)	Total Pipeline Projects
Office (c)	3,990	4,090	1,790	9,870
Retail (d)	--	--	360	360
Transient Hotel	1,600	210	1,000	2,810 (e)
Housing (f)	120	340	630	2,090 (g)
Cultural/Institutional/Educational/Other	--	--	570	570
Parking	--	--	1,030	1,030
Total	5,710	4,640	5,380	15,730

NOTE: Projects under construction in mid-1982 and to be completed before or during 1984 are included in the 1984 setting.

(a) The figures are total new space without allowance for demolition.

(b) Includes uses planned for the portion of the Yerba Buena Center Redevelopment Project Area (YBC) that is in the C-3 District; uses are as defined by the YBC Main Program Alternative.

(c) Space in proposed office buildings includes space for office and retail uses in office buildings.

(d) Space in proposed free-standing retail buildings only; does not include retail use in new office buildings.

(e) 4,340 hotel rooms.

(f) Housing includes space in solely residential projects and housing space in office building projects.

(g) 1,380 housing units.

SOURCES: Department of City Planning and San Francisco Redevelopment Agency.

Alternatives would not begin to have an effect on the newly constructed space placed in use until approximately 1990. In other words, the forecast for 1984-1990 is the same for all Alternatives and the year 1990 becomes in effect a "second setting".

While this situation is in part a result of the large amount of new space in the pipeline, the long time needed to develop a large office building is also a factor. A typical schedule requires two years for formal review and planning for construction, three years for construction, and an average of at least one additional year to full occupancy. Thus, a building under formal review in 1983 would typically not be occupied until 1988 or 1989.

It is assumed that the pipeline projects provide the most reasonable estimate of the development that will occur in the C-3 District following that already under construction in mid-1982 and included in the 1984 land use and real estate setting. It is also assumed that the pipeline projects are developed as currently proposed. Two points regarding these assumptions should be noted.

First, these assumptions are not intended to imply that no pipeline projects would be subject to the next generation of downtown development controls, or that every one of these projects would be built as currently proposed. However, the assumptions appear reasonable since it is not possible to anticipate the status of each project at the time new policies are adopted. It is also difficult to anticipate how a project might have to be modified were it to become subject to future policies. To the extent that future policies affect pipeline projects, the impacts for the 1990-2000 period discussed later in this section would begin to appear prior to 1990.

Second, these assumptions about the pipeline projects are not intended to imply that no other projects would be built before those in the pipeline. Given the long period of development described above, this concern is most relevant for the late 1980's. If the timing of pipeline projects were extended into the 1990's and other projects were built

before them, the 1990 forecast could differ from the one in this study depending on the characteristics of the other projects built. As now analyzed, however, the relative impacts of the Alternatives are clearly shown by the Alternative forecasts for the 1990-2000 period. It would be more difficult to understand those impacts if pipeline projects were included in the latter period and a few new, as yet unproposed, projects assumed to be built in the 1984-1990 period. It would also be difficult to decide which pipeline projects are most likely to be deferred by their developers, or denied by the City.

Space Use

Table V.B.2 shows the total space in the C-3 District in 1990 by use. The 1990 forecasts shown here incorporate space existing at the end of 1984 (see Table IV.B.8), plus space constructed in the 1984-1990 period (pipeline projects), less space demolished to allow for new construction. The totals also reflect the projected conversion of some space to office use over the 1984 to 1990 period./7/ The net changes in the C-3 District space account for all of these factors and are summarized in Table V.B.2 by use category./8/

The net increase in total C-3 District space in all use categories from 1984 to 1990 is projected to be 12.2 million sq. ft. This represents an increase of 11.8 percent from the 1984 total.

Office Space

The amount of space constructed in new office buildings over the six-year period would be 9.9 million sq. ft. (see Table V.B.1). This amount is equal to an average of 1.6 million sq. ft. per year. This rate for the C-3 District is very similar to the historical rate of new office development since 1965 for the City as a whole (1.7 million sq. ft. 1965-1981), but it is less than the high annual average figures in the C-3 District for the 1981-1984 period (2.5 million sq. ft. per year). Nevertheless, it may be considered a strong rate of growth reflecting the profitability of office development and the growth of business activities which occupy office space.

TABLE V.B.2: TOTAL AND NET CHANGE IN C-3 DISTRICT SPACE BY USE, 1984-1990 (Thousands of Gross Sq. Ft.)

Use	Total C-3 District Space, 1990	Net Change In Space 1984-1990	Percent Change 1984-1990
Office	70,492	8,418	13.6%
Retail	8,949	729	8.9%
Transient Hotel	12,535	2,813	28.9%
Residential Hotel	2,835	(13)	-0.5%
Housing	5,273	1,095	26.2%
Cultural/Institutional/ Educational/Other	5,998	(122)	-2.0%
Industrial/Warehouse/ Automotive	3,285	(842)	-20.4%
Parking	6,423	165	2.6%
TOTAL	115,790	12,243	11.8%

NOTE: The net changes in space shown here incorporate new construction, demolition, and conversion. These net changes summarize the differences between the 1984 setting in Table IV.B.8 and the 1990 forecasts shown here. Table G.14 at the end of Appendix G shows the 1990 distribution of space in the C-3 District by both use and subarea. Tables G.22 and G.23 identify the new construction, demolition, and conversion responsible for the net changes shown here for each use and the changes by subarea for office use.

SOURCE: Recht Hausrath & Associates

When adjustments are made for demolition, conversion, and the occupancy of some space in office buildings by other uses, the net increase in space occupied by office uses 1984-1990 is 8.4 million sq. ft. (see Table V.B.2), an increase of 13.6 percent over this period./9/

Conversions to office space from space in other uses account for about 10 percent of this increase. Seventy percent of this office development is projected to occur in the Central Office area, Subarea 1. This is similar to the share of total C-3 District office space in Subarea 1. There is some increase in office space forecast for all the other sub-areas, with the largest increases in Subareas 6 and 2 and the smallest in Subareas 4 and 7.

Retail and Hotel Space

The forecast net addition of retail space in the C-3 District, 730,000 sq. ft., is an increase of nine percent over the 1984 total. The majority of the new retail space would be in the Central Office area (Subarea 1) and around Union Square (Subarea 6). Forty-six percent of the net additional space would be provided in Subarea 1, mostly as a part of new office buildings. The new space in Subarea 6, 34 percent of the total, would be provided in large retail and mixed-use projects.

Between 1984 and 1990, 4,340 transient hotel rooms are projected to be added in the C-3 District./10/ The total number of new rooms is equivalent to about 2.8 million sq. ft. of additional hotel space, representing an increase of about 25 percent over 1984. All of the new hotel development would occur in the Tenderloin and Union Square areas, Subareas 5 and 6, where most of the existing hotel space in the C-3 District is located.

It is important to note that the pipeline contains an unprecedented number of major hotel projects. The large number of new hotel rooms reflects the large increases in room rates and the high occupancy which occurred in the 1976-1980 period. This surge in supply is also partially a response to the completion of the Moscone Convention Center and expectations that convention and tourist activity in the City and the downtown area will increase in the years ahead. The annual rate of hotel development during this period is not likely to be matched after 1990. Depending on the duration of the current recession, new hotel

development in the pipeline could occur over a longer time period, in which case the 1984-1990 addition of hotel rooms would be slightly less and the 1990-2000 growth could be somewhat greater than shown in this report./11/

Residential and Other Uses

About 1,380 new housing units are included in the pipeline projects for the C-3 District. Over half are in Yerba Buena Center. A small amount of residential hotel space is expected to be demolished for new construction so that the net change in residential use would be slightly less (about one percent) than the new housing constructed.

Space in the cultural/institutional/educational/other use category is projected to decline by about two percent in the C-3 District by 1990. The 565,000 sq. ft. of cultural center, ballroom, and educational/meeting room space to be constructed in YBC, plus about 156,000 sq. ft. of space to be occupied by these uses in older office buildings (most by educational or non-profit uses), would be offset by the projected loss of 840,000 sq. ft. of space in the "other" space category. Most of this decrease would be space demolished for new construction (85 - 90 percent) and could include a large share of currently vacant space./12/ A smaller share would be in buildings converted to office use.

Space in industrial/warehouse/automotive uses is projected to decrease in the C-3 District by 842,000 sq. ft., a decline of about 20 percent. Most of this change would represent conversions of existing space to office use. In terms of net change, parking space in the C-3 District would increase by only a small amount. The large addition of parking in YBC would be just about offset by other parking lost to make way for new construction.

2000 C-3 DISTRICT LAND USE AND REAL ESTATE DEVELOPMENT

Approach

From the perspective of the real estate market, each of the Alternatives constitutes a set of constraints on development activities. The following overview descriptions of the Alternatives are presented to reflect a real estate market interpretation of the policies.

The reader is reminded that none of the Alternatives reflect current City policy. While Alternative 1 is defined by the present City Planning Code, it does not assume that any of the following are in effect: current interim controls (which set a moratorium on the use of bonuses except for housing), the current Office-Housing Production Program (OHPP) Guidelines, or the use of discretionary review./13/ For all Alternatives, it is assumed that new development would occur according to the minimum required standards of each Alternative. No interim policies or non-specified discretionary review procedures are included in any of the Alternatives as analyzed in this study.

Alternative 1 would generally allow the largest amount of development on each site, compared to the other Alternatives. Because Alternative 1 allows the most development and was previous City policy, it is often convenient to express information about other Alternatives in terms of how they compare with Alternative 1. Alternative 2, for example, contains moderately greater limits on the size of buildings and design parameters in the Central Office area (Subarea 1) which result in higher construction costs (in constant dollars) than Alternative 1.

Alternatives 3, 4 and 5 place greater constraints on the size of development projects, compared to Alternatives 1 and 2. In addition, Alternative 4 prohibits the conversion of viable industrial buildings to office uses, includes the most expensive housing requirements, and proposes some down-zoning./14/ In addition to its effect on the size of buildings, Alternative 5 proposes design requirements and moderately costly housing requirements, as well as down-zoning in several areas.

The majority of the policies of each Alternative were incorporated into the analysis through the "design" of prototypical buildings that would be constructed under varied circumstances./15/ Buildings were "designed" for each range of height limits, in each C-3 use district, for each Alternative. An example would be a prototype building developed to reflect 400 to 500 foot height limits in the C-3-0 zoning district for Alternative 2. About 70 prototypical buildings were developed to reflect the differences due to height limits, zoning districts, and other policies of the Alternatives. The information prepared about each prototypical building was used in the real estate feasibility analysis. The characteristics of these prototypes are described in Appendix D and the real estate feasibility analysis is described in Appendix G.

Constraints on building size are primarily represented in the floor area ratios (FARs) of the prototypes./16/ The FARs of the prototypes reflect not only the policies regarding basic and maximum FARs of an Alternative, but also other potential constraints on building size, as well as the availability of floor area bonuses./17/ The FARs of the prototypes do not reflect the potential for the use of transferable development rights (TDRs) from historic buildings./18/ (The effect of TDRs was separately analyzed.) The average FAR of prototype office buildings for each Alternative is shown in the second column of Table V.B.3./19/ The average FARs are indicators of the relative differences in the supply of office space that could be provided under each Alternative before the effects of the TDR incentives are included./20/ The average FAR for Alternative 2 prototypes is moderately lower than that for Alternative 1 which has the highest average FAR. The prototypes of Alternatives 3 and 5 have lower average FARs. Alternative 4 has the lowest average FAR.

The cost of the design requirements for each Alternative is reflected in the construction cost estimates prepared for each prototype building. The prototypes of Alternatives 2 and 5 have the highest construction costs per square foot for meeting design requirements. The design requirements of Alternatives 1, 3, and 4 are less costly. Table V.B.3 provides a relative comparison among Alternatives for the cost of design requirements./21/

TABLE V.B.3: SUMMARY COMPARISON OF ALTERNATIVES WITH REGARD TO FACTORS AFFECTING THE SIZE OF NEW OFFICE BUILDINGS AND THE COSTS OF DEVELOPMENT

Alternatives	Average Prototype FAR(a)	Relative Cost Of Design Requirements(b)	Relative Cost Of Housing Requirements(c)
1	13.9	Lower	-
2	12.9	Higher	-
3	9.9	Lower	-
4	8.0	Lower	Higher
5	9.5	Higher	Lower

NOTE: The purpose of this table, and of the accompanying text is to provide a general overview of the differences between Alternatives and to highlight some aspects of the Alternatives which affect the amount and pattern of development. The ranges shown for each item reflect only the relative ranking among Alternatives, not absolute differences from some other set of conditions or time period. The reader should keep in mind how the Alternatives compare with regard to these factors while reading the discussion of the forecasts which begins on page V.B.14. A detailed description of the methodology and assumptions for the real estate analysis is provided in Appendix G.

- (a) The average FAR of prototype office buildings across all subareas in the C-3 District (see note 19). The size of the prototypical buildings reflects bonuses except transferable development rights (TDRs). TDRs are likely to add more FAR in Alternative 5 than in the other Alternatives. These FARs exclude residential space in office buildings. A comparison of the TDR policies of the Alternatives appears in Table V.B.4.
- (b) Based on cost estimates prepared for the prototype buildings (see Appendix D and note 21). The cost comparisons are for buildings of similar size so as to isolate the effect of design requirements from the effects of size/height.
- (c) Alternative 4 requires that more housing be provided than does Alternative 5 although the differences in quantity are not large. Alternative 4 has more costly provisions for low/moderate priced housing. Alternatives 1, 2, and 3 do not have a housing requirement.

SOURCE: Recht Hausrath & Associates

V. Environmental Impacts

The housing requirements of Alternatives 4 and 5 also have an effect on the cost of office development. Although the quantity of housing required to be provided would be relatively similar for Alternatives 4 and 5 (Alternative 4 requires slightly more housing), the Alternative 4 policy for providing housing for workers in all income categories would have a higher cost. The costs of housing requirements are compared among Alternatives in Table V.B.3.

The information about FARs and construction costs for the building prototypes was used in an analysis of the economic feasibility of new development for each parcel in the C-3 District./22/ The increase in property value in excess of construction costs (an indicator of the potential for new development) was measured as the difference between (1) the value of a new prototype building on the site and (2) the cost of a new prototype building plus the value of the existing building (if any). Building values, for both new and existing buildings, were estimated based on typical rents in that location. The results of the feasibility analysis of the building prototypes provided relative rankings of the locations within the C-3 District in terms of their probability of development under those policies of each Alternative that were incorporated into the prototypes. This information was used in predicting the potential amount and location of office construction. This information was also useful in the forecasts of retail, hotel, and other new development and its location. (See Appendix G for a detailed description of the model used for the feasibility calculations.)

In addition to the feasibility analysis of the prototype buildings, the real estate analysis included separate evaluations of the effectiveness of two types of incentives proposed as a part of the Alternatives. These include the incentives for retaining architectural resources (use of TDRs) and the bonus provisions to encourage housing development./23/ Each of these incentives was analyzed to determine whether it would achieve the purpose for which it was proposed and to identify its effect on office development potentials and overall downtown development patterns./24/

Table V.B.4 provides a summary comparison of how the Alternatives compare with regard to the effectiveness of the incentives for retention of architectural resources and provision of housing. The explanation of how the Alternatives compare regarding each of these policies is included at the end of this section (beginning on page V.B.51) to allow for a detailed discussion without disrupting the more general explanation of approach in this section. Since these incentives affect the office space forecasts, the reader should keep in mind how the Alternatives compare with regard to these factors while reading the description of the forecasts in the next subsection.

TABLE V.B.4: SUMMARY COMPARISON OF ALTERNATIVES WITH REGARD TO INCENTIVES TO RETAIN ARCHITECTURAL RESOURCES AND TO PRODUCE HOUSING

<u>Alternatives</u>	<u>Incentives To Retain Architectural Resources</u>	<u>Incentives To Produce Housing (a)</u>
1	Weakest	None
2	Strongest	Strong
3	Weak	Moderate
4	Moderate	Strong
5	Strong	Weak

NOTE: The purpose of this table is to provide a general overview of the differences between Alternatives. The ranges shown for each item reflect only the relative ranking among Alternatives, not absolute differences from some other set of conditions or time period. The reader should keep in mind how the Alternatives compare with regard to these factors while reading the discussion of the forecasts which begins on page V.B.14. A detailed description of the methodology and assumptions for the real estate analysis is provided in Appendix G.

- (a) The incentives to produce housing (through office space bonuses) are considered here separate from the housing requirement considered in Table V.B.3.

SOURCE: Recht Hausrath & Associates

After completion of the real estate feasibility analyses, the potential supply of newly developed space for each Alternative was matched with the demand for space under the baseline employment forecasts (see Section V.C). This analysis considered the tradeoffs that businesses of different types would make in their location decisions under the demand and supply conditions of each Alternative.

The office market received the most detailed scrutiny. The demand for office space was forecast for ten subgroups, each with different characteristics as to locational preferences and ability and willingness to pay rent. This demand was matched with the potential supply of office space in each of the seven subareas for each Alternative. When the supply of space in preferred locations was scarce, relative to demand, the characteristics of the demand subgroups and the nature of the potential supply in less preferable areas were the basis for judgments as to which demand subgroups would (1) secure space in the preferred location, (2) accept other locations in the C-3 District, or (3) choose to locate elsewhere. (See Appendix H for a more detailed description of this "matching" process.)

The interaction of supply and demand in the real estate market results in a set of rent levels for various types of space. Through effects on the supply of space, the development costs and building size constraints of the Alternatives would initially affect development feasibility at rent levels attained before the change in policies. In general, land owners and developers will then attempt to pass on the full amount of higher costs or lower land values to tenants in the form of higher rents. Whether rents are increased depends on demand, i.e. whether tenants are willing and able to pay higher rents. Generally, a smaller supply of space for a given demand will result in rents increasing until a combination of both firms choosing to save money by locating elsewhere, and increased new construction generated by the higher rents again balances supply and demand.

The approach used in this study was to analyze the various factors affecting rents, to estimate the change in rent that land owners and developers would require to maintain their expected values under the pre-existing controls, and then to consider the extent to which the supply/demand balance under an Alternative would allow rents to be increased. It should be understood that the level of rents expected under each Alternative is both a result of market interactions and a critical market factor in rationing space and triggering new development. Because of these latter roles, it was a key consideration in the matching process described above. (See Appendix G for a more detailed description of the role of rents in the process of forecasting future development.)

Analysis of the non-office uses was less detailed than the office development feasibility analysis, although it considered many of the same types of factors. The forecasts of retail development considered the effect of office growth on retail sales forecasts, the importance of locations in the established retail areas and of those accessible to the growing office worker population, the typical mix of retail uses in office buildings and how those proportions vary by subarea, as well as the potential for increased retail activity in existing space. The availability of suitable sites in preferred locations was a major consideration for transient hotel development. Consideration was also given to the size and cost of allowable new hotel development as well as to the interaction between hotel demand and the growth of office activity.

For the subordinate downtown uses (cultural/institutional/educational/other, industrial/warehouse/automotive, and parking), the locations of existing space, by subarea, and the competition for sites from other uses were the principal market considerations.

Overview of Space Forecasts

The conclusions regarding the impacts of the Alternatives on land use and real estate development in the C-3 District over the 1990-2000 period can be summarized as follows:

V. Environmental Impacts

- Office buildings are the major use in the C-3 District; the majority of the new development projected in the 1990-2000 period is office space.
- The amount of office space constructed would vary among the Alternatives. The Alternative with the largest amount of office development would have more than twice the construction of the Alternative with the least amount. The total amount of office space in the year 2000, however, would differ among Alternatives by about 10 percent.
- The location of office construction within the C-3 District would vary among the Alternatives.
- Differences among Alternatives in the amount of C-3 District office development would not necessarily mean similar differences for the entire City of San Francisco. The citywide outcome depends on policies for office development in areas outside of the C-3 District.
- C-3 District retail activity is projected to grow during the 1990-2000 period. The Alternatives indirectly affect retail sales growth through their effect on the growth of downtown employment and the sales contributed by office workers. The differences in retail sales growth among the Alternatives would not be large.
- The Alternatives would have more effect on the expansion of retail space than on the growth of retail sales. The reason is that more sales would occur in existing retail space if less new space is built. Among the Alternatives, there would be differences in the amount of retail space added, primarily in the amount of retail space in new office buildings.
- The development of transient hotel space in the C-3 District will continue in the 1990-2000 period, though at a slower pace than in the prior decade. There would be very little difference among the Alternatives in the hotel space built.
- Residential development in the C-3 District would vary among the Alternatives due to differences in housing requirements and incentives to produce housing.
- During the 1990-2000 period, the amount of space devoted to cultural/educational/institutional/other, industrial/warehouse/automotive and parking uses is projected to decline in the C-3 District due to increased competition for space from other uses. The Alternatives make some difference in the amount of change that would occur.

Table V.B.5 compares total C-3 District commercial space by use (all uses except residential hotels and housing) among Alternatives. Table V.B.6 summarizes the 1990 to 2000 changes in C-3 District commercial space by use for each Alternative. Table V.B.7 shows the office

building construction forecast by subarea in the 1990 to 2000 period by Alternative. As evidenced by land use inventory data and pipeline projects, not all of this space would be occupied by office uses.

Supplemental tables at the end of Appendix G show even more detail for the C-3 District space forecasts for each Alternative. These tables show the distribution of total space by use and subarea (comparable to Tables IV.B.1 and IV.B.8 in the Land Use and Real Estate Development Setting). The supplemental tables also show the components of the change in C-3 District space by use and the components of change in C-3 District office space by subarea./25/

The discussion which follows summarizes the impacts for each commercial space use category (office, retail, hotel, etc.) and then considers these impacts from the perspective of land use in the rest of the City and the region./26/ The differences between the 1990-2000 forecasts for each Alternative, as shown in Table V.B.6, highlight the impacts of the development policies of the Alternatives. Comparing the forecast totals by use for the year 2000 across Alternatives (see Table V.B.5) reveals much less difference among Alternatives. This is because the base, in terms of existing C-3 District development, is so much greater than even the maximum change that could occur during one ten-year period. A discussion of longer term effects beyond 2000 is included later in this section, beginning on page V.B.49.

It should be remembered throughout the following description of the development forecasts that the C-3 District is only a portion of the City of San Francisco. Information about the impacts of the Alternatives within the C-3 District is not a complete description of impacts on the City. Citywide impacts depend on whether or not the Alternative policies or other policies are in effect elsewhere in the City. Impacts on the City outside of the C-3 District are addressed after all the uses have been discussed. The regional context is also described. (See pages V.B.45-48.)

TABLE V.B.5: C-3 DISTRICT COMMERCIAL SPACE BY USE AND ALTERNATIVE, 2000
(Thousands of Gross Square Feet)

Use	Alternative				
	1	2	3	4	5
Office	86,490	85,266	83,425	77,522	77,919
Retail	10,288	10,192	9,945	9,766	9,773
Transient Hotel	14,873	14,873	14,873	14,595	14,595
Cultural/Institutional Educational/Other	5,439	5,205	5,006	5,537	5,331
Industrial/Warehouse/ Automotive	1,742	2,028	1,738	3,072	2,262
Parking	5,819	5,823	5,834	6,112	5,974

Note: Because of the large base of C-3 District development existing before 1990, the overall downtown pattern as shown by the totals above changes only slowly over time. Thus, the differences among Alternatives in total C-3 District commercial space in 2000 are relatively small. The net changes in commercial space between 1990 and 2000, shown in Table V.B.6, highlight the effects of the Alternatives on C-3 District land use patterns.

SOURCE: Recht Hausrath & Associates

TABLE V.B.6: CHANGES IN C-3 DISTRICT COMMERCIAL SPACE BY USE AND ALTERNATIVE, 1990-2000

Use	Change in Space 1990 - 2000 By Alternative (Thousands of Gross Sq. Ft.)					Percentage Change 1990 - 2000 By Alternative				
	1	2	3	4	5	1	2	3	4	5
Office	15,998	14,774	12,933	7,030	7,427	22.7%	21.0%	18.3%	10.0%	10.5%
Retail	1,339	1,243	996	817	824	15.0%	13.9%	11.1%	9.1%	9.2%
Transient Hotel	2,338	2,338	2,338	2,060	2,060	18.7%	18.7%	18.7%	16.4%	16.4%
Cultural/Institutional /Educational/Other	(559)	(793)	(992)	(461)	(667)	-9.3%	-13.2%	-16.5%	-7.7%	-11.1%
Industrial/Warehouse Automotive	(1,543)	(1,257)	(1,547)	(213)	(1,023)	-47.0%	-38.3%	-47.1%	-6.5%	-31.1%
Parking	(604)	(600)	(589)	(311)	(449)	-9.4%	-9.3%	-9.2%	-4.8%	-7.0%

Note: This table reflects changes in use due to new construction, demolition and conversion during the 1990-2000 period. The numbers shown here are the differences between the 1990 distribution of space by use (Table V.B.2) and the 2000 distribution of space by use (Table V.B.5), for each Alternative. The components of the change for each use are shown in the supplemental tables at the end of Appendix G.

SOURCE: Recht Hausrath & Associates

TABLE V.B.7: C-3 DISTRICT OFFICE BUILDING CONSTRUCTION BY SUBAREA AND ALTERNATIVE, 1990-2000

	Subarea							Total C-3 District	Annual Average Construction
	1	2	3	4	5	6	7		
Space In New Office Buildings (Thousands of Gross Sq. Ft.)									
Alternative 1	10,000	2,500	1,000	500	1,035	1,400	500	16,935	1,690
Alternative 2	9,000	2,500	900	450	900	1,300	450	15,500	1,550
Alternative 3	7,000	1,800	1,300	700	1,000	1,100	300	13,200	1,320
Alternative 4	6,000	800	200	100	200	600	200	8,100	810
Alternative 5	5,000	1,200	200	200	300	400	100	7,400	740
Percentage Distribution By Subarea (Percentage)									
Alternative 1	59.1	14.8	5.9	2.9	6.1	8.3	2.9	100.0%	
Alternative 2	58.1	16.1	5.8	2.9	5.8	8.4	2.9	100.0%	
Alternative 3	53.0	13.6	9.9	5.3	7.6	8.3	2.3	100.0%	
Alternative 4	74.1	9.9	2.5	1.1	2.5	7.4	2.5	100.0%	
Alternative 5	67.6	16.2	2.7	2.7	4.1	5.4	1.3	100.0%	

SOURCE: Recht Hausrath & Associates

The final two parts of this section provide further description of the effects of the Alternatives. They separately consider the incentives for retaining architectural resources (pages V.B.51-57) and the incentives and requirements for producing housing (pages V.B.57-69). The housing discussion also provides the forecasts of future housing development in the C-3 District.

It is important to remember that the effects of incentives for housing and retaining architectural resources are incorporated in the space use forecasts in Tables V.B.5, V.B.6, and V.B.7 and discussed in the following subsections for each Alternative. These forecasts describe the combined outcome of all of the policies of the Alternatives and of the market factors behind the demand for space of each type. Thus, the employment forecasts presented in Section V.C are consistent with the space forecasts in this section. Together, the space and employment forecasts present two ways of looking at the same projected future./27/

Office Space

Office building construction for the C-3 District 1990 to 2000 under each Alternative is shown in Table V.B.7. The net increase in office space over this period is presented in Table V.B.6./28/ As discussed for earlier periods, the net increase of space in office use reflects new construction, the occupancy of some space in new office buildings by other uses, demolition, and conversions./29/

The summary in Table V.B.8 highlights the impacts of the Alternatives on land use and real estate in the C-3 District by identifying how the policies affect the potential supply of office space in each of the subareas./30/ Across the top, land use characteristics and real estate market conditions are summarized for each subarea. In the left hand column, the table characterizes the relative differences among Alternatives in terms of allowable building sizes and development costs. Reading across the table, comments differentiate the effects of the Alternatives in each subarea. The differences among subareas are due

TABLE V.B.8: COMPARISON OF C-3 DISTRICT OFFICE SPACE CONSIDERATIONS BY SUBAREA AMONG ALTERNATIVES

Alternative	Characteristics of Alternatives	Subarea 1 Central Office	Subarea 2 East South of Market	Subarea 3 Central South of Market	Subarea 4 South Van Ness	Subarea 5 Tenderloin	Subarea 6 Union Square	Subarea 7 Financial District
1	<ul style="list-style-type: none"> • Least size constraints • Low floor height • Large floor impacts • Least cost impacts 	<ul style="list-style-type: none"> • Most densely developed subarea • Mainly office, with supporting uses • Premium office market 	<ul style="list-style-type: none"> • Low density of development • Less charging from industrial • Low-priced office alternative to Subarea 1 	<ul style="list-style-type: none"> • Least densely developed subarea • Industrial and mixed use • Office use but weak market for new office development 	<ul style="list-style-type: none"> • Moderate density of development with • Government-related office and bank operations • Weak market for speculative office development 	<ul style="list-style-type: none"> • High density north of Market Street • Low density south of Market Street • Greatest mix of uses of any subarea • Potential for future office development along Market Street and continuation of existing uses to office 	<ul style="list-style-type: none"> • High density of development • Mixed uses, most retail • Strong office market near Subarea 1 	<ul style="list-style-type: none"> • High density office market • Mixed uses, office commercial, retail and special use • Strong office market near Subarea 1
2	<ul style="list-style-type: none"> • Moderate size constraints • Lowest height limits but effective height limits • Different mix of floor heights • Highest cost impacts • Streamlined project review 	<ul style="list-style-type: none"> • Least development opportunities • Can afford to demolish moderate size buildings 	<ul style="list-style-type: none"> • Least available at lower cost than in Subarea 1 • Development pressure increases due to office development • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • Weak market for new development • Conversion to office currently increases 	<ul style="list-style-type: none"> • Development opportunities but moderate demand 	<ul style="list-style-type: none"> • Development opportunities along Market Street but moderate demand • Conversion to office gradually increases 	<ul style="list-style-type: none"> • Few development constraints, but shortage of potential sites 	<ul style="list-style-type: none"> • Few development constraints, but shortage of potential sites
3	<ul style="list-style-type: none"> • Extensive size constraints • Lowest height limits but effective height limits • Different mix of floor heights • Highest cost impacts • Streamlined project review 	<ul style="list-style-type: none"> • Potential supply about 30% less than Alternative 1 • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • Potential supply about 30% less than Alternative 1 • Development pressure increases due to office development • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • Same conditions as Alternative 1 	<ul style="list-style-type: none"> • Feasibility of new development increases • Conversion to office increases 	<ul style="list-style-type: none"> • Feasibility of new development increases south of Market Street • Conversion to office increases 	<ul style="list-style-type: none"> • Size constraints reduce feasibility of new development 	<ul style="list-style-type: none"> • Size constraints reduce feasibility of new development
4	<ul style="list-style-type: none"> • Extensive size constraints • Low floor height • Large floor impacts • Highest cost impacts • Streamlined project review 	<ul style="list-style-type: none"> • Potential supply about 25% less than Alternative 1 • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • Potential supply about 25% less than Alternative 1 • Development pressure increases due to office development • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • High costs and down-zoning reduce feasibility of new development • Conversion of industrial to office effectively prohibited 	<ul style="list-style-type: none"> • High costs and down-zoning reduce feasibility of new development • Conversion of industrial to office effectively prohibited 	<ul style="list-style-type: none"> • High costs and down-zoning reduce feasibility of new development • Conversion of industrial to office effectively prohibited 	<ul style="list-style-type: none"> • Potential supply only about 10% less than Alternative 1 • High costs have less effect in strong market area 	<ul style="list-style-type: none"> • Potential supply only about 10% less than Alternative 1 • High costs have less effect in strong market area
5	<ul style="list-style-type: none"> • Extensive size constraints • Low floor height • Large floor impacts • Highest cost impacts • Streamlined project review 	<ul style="list-style-type: none"> • Potential supply 30-35% less than Alternative 1 • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • Potential supply 30-35% less than Alternative 1 • Development pressure increases due to office development • Height limits constrain size on north side of street 	<ul style="list-style-type: none"> • B-C zoning limits new office development and conversions in part • Size constraints and high costs reduce feasibility of development in balance of subarea 	<ul style="list-style-type: none"> • B-C zoning limits new office development and conversions in part • Size constraints and high costs reduce feasibility of development in balance of subarea 	<ul style="list-style-type: none"> • B-C zoning limits new office development and conversions in part • Size constraints and high costs reduce feasibility of development in balance of subarea 	<ul style="list-style-type: none"> • Potential supply about 45% less than Alternative 1 • High costs have less effect in strong market area 	<ul style="list-style-type: none"> • Potential supply about 45% less than Alternative 1 • High costs have less effect in strong market area

SOURCE: Environmental Science Associates, Inc.

to the specifics of the Alternative and to the characteristics of the subarea. Interpreting the remarks in the table is easier after reviewing the discussion of the Alternatives which follows.

Alternative 1

Under the policies of Alternative 1, office development in the C-3 District would continue at about 1.7 million sq. ft. per year, a rate close to that for the 1984 to 1990 period, though lower than the 1981 to 1984 level of development. The total net addition of office space from 1990 to 2000 is forecast at 16.0 million sq. ft., an increase of about 23 percent over the amount of office space in 1990. Construction costs (in constant dollars) would not be changed from their present level. Relative to the other Alternatives, Alternative 1 would result in the greatest supply of office space; it would therefore tend to have the lowest rents./31/

Subarea 1 would continue to have the largest amount of new office construction among the seven C-3 District subareas, as it would in all the Alternatives. The majority of the sites in the financial district portion of Subarea 1, regarded as the premium location for office use, would be developed, including those with architecturally significant resources./32/ As developable sites become more scarce, the area accepted as the high rent office location would expand, much as it has in the past. Thus, to the west, a large amount of new office building construction is forecast along Kearny Street under this Alternative.

The central office core would also expand further south of Market Street into Subarea 2. From 1990-2000, 15 percent of C-3 District office construction is projected to be located in Subarea 2; until 1990, only seven percent of total C-3 District office space is projected to be in Subarea 2. A substantial supply of vacant parcels (often used for parking) and many sites with small buildings make this subarea a stronger location for new office development as the central office core expands.

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Some higher rent office space would also be developed in Subareas 6 and 7, directly west of the present financial district core. This would occur even though the sites in these areas are generally already intensively developed and other activities (retail and hotel) also compete for the available space.

Some office development would occur along Market Street in Subareas 5 and 6. The transportation facilities available on Market Street and the presence of non-intensively developed sites are important advantages.

Development would also occur in Subareas 3, 4 and 5 primarily in the vacant and less intensely developed areas south of Market Street./33/ The amount of office development south of Market Street in these subareas would be relatively small during this ten-year period, however, as an adequate land supply would still be available in more desirable locations.

The conversion of existing space to office use would continue at a steady pace, supplying about 11 percent of the net additional office space in this Alternative./34/ Subarea 3 contains the largest amount of space available for conversion to office use from other uses which typically pay lower rent. Conversion activities would gradually accelerate in this subarea.

A sizable amount of older office space in Subareas 5 and 6 would be upgraded to attract higher paying tenants (such as the upper floor space around Union Square). Although such upgrading would not increase the amount of office space, it would result in a larger supply of improved office space./35/

Since Alternative 1 provides no office bonus for housing and since TDRs are available only on the same or adjacent sites, policies of these two types under Alternative 1 are not projected to have an impact on the supply or location of new office space constructed./36/

Alternative 2

Alternative 2 would result in the development of office space at a rate very similar to that of Alternative 1. The net addition of office space from 1990 to 2000 would be 14.8 million sq. ft., representing an increase over this period of 21 percent. Construction costs would be higher than in Alternative 1 because of more expensive design requirements. Rents would be somewhat higher than in Alternative 1 because of both higher costs and demand pressure.

The size of buildings in Subarea 1 would be about the same as in Alternative 1, except for size reductions due to lower permitted heights north of Sacramento Street. The lowering of the height limits in this area would result in a typical reduction of 25 percent in the size of buildings constructed here, compared to Alternative 1. Overall, there would be about 10 percent less office space built in Subarea 1 under this Alternative as compared to Alternative 1.

Like Alternative 1, the majority of sites in the financial district portion of Subarea 1, regarded as the premium location for office use, would be developed under Alternative 2. However, the bonuses offered for historic preservation under Alternative 2 would result in some sites with architectural resources remaining undeveloped that would be developed under Alternative 1. Alternative 2 achieves almost as strong a pace of office development (even though some architectural resources are saved) because the incentives for historic preservation and housing development provide additional office development bonuses.

Subarea 2 would have the same growth of office space as it would in Alternative 1. Changes in height limits would not be a factor. The effect of the moderately higher construction costs would be offset by a small increase in demand due to the lower supply of new office space in Subarea 1.

In Subareas 4, 5, 6 and 7, height and bulk limitations would result in

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modest reductions in the size of new buildings (typically about 10 percent) in some portions of these subareas. Therefore, the amount of office space developed would be a little less than in Alternative 1.

Development in Subarea 3 would be relatively unaffected by the differences in the height and bulk limits of Alternative 2. This subarea would have almost the same amount of new space built as it would in Alternative 1.

Conversions to office use would occur at about the same rate and in the same locations as in Alternative 1. Converted space would be approximately 12 percent of the net addition to office space under Alternative 2.

Incentives to provide housing and to retain architectural resources are strong in Alternative 2. Along with the other incentives provided, they result in buildings that would be similar in size to those of Alternative 1, contributing especially to the office development forecasts for Subareas 1 and 2. The effect of these incentives has been incorporated in the Alternative 2 forecasts of office development.

Alternative 3

Compared to Alternatives 1 and 2, the policies of Alternative 3 would result in smaller buildings and a smaller supply of new office space built in the C-3 District. The net addition of office space would be 12.9 million sq. ft. representing an increase in space of 18 percent over the 1990 to 2000 period. The cost of construction would be relatively low, as there are no additional design requirements and the lower buildings would be relatively less expensive per square foot to construct than the taller buildings of Alternatives 1 and 2. Because of market pressure, due to a smaller addition of space, particularly in the more desirable subareas, rents under Alternative 3 would be somewhat higher than they would be under Alternative 1.

Alternative 3 would result in more sites being developed than would

Alternatives 1 and 2, though the limits on building size would still result in a smaller supply of new space. New office construction would be dispersed over a broader area under this Alternative than under any of the other Alternatives.

The number of sites developed would not increase to fully compensate for limits on building size./37/ The lower FAR limits of Alternative 3 would have little effect on the feasibility of development on vacant sites, though they would affect the amount of financial gain from development to the land owner/developer./38/ They would affect the feasibility of demolishing existing buildings to construct new space, however, because the net increase in space from new construction would be reduced. For example, the reduction in the allowable size of a new building from an FAR of 12 to an FAR of 8 on a site with an existing building at an FAR of 6, would result in a two-thirds reduction in the net new space provided while the total construction cost may only have been reduced by about one-third. Therefore, the lower FAR limits of Alternative 3 as compared to Alternatives 1 and 2 would probably result in fewer buildings of medium size being demolished to provide sites for new development.

The amount of office development in Subarea 1 would be affected by the size limitations on buildings under Alternative 3. The average size of buildings would be about 30 percent below what it would be in Alternative 1. The amount of land utilized for new office construction in Subarea 1 would be about the same as in Alternative 1. Generally, the incentives for the retention of architectural resources would not be successful (due to the locational restrictions on the use of TDRs and the general effect of lower FARs on the feasibility of new development projects) and thus would not affect office construction, particularly in Subarea 1.

Newly constructed buildings in Subarea 2 would also be smaller than in Alternatives 1 and 2. The result would be, as in Subarea 1, that buildings would be reduced about 30 percent in size and the supply of new office space would be reduced by a similar amount.

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The FAR of new buildings in Subareas 6 and 7 would be reduced by roughly the same amount, on the average, as in Subareas 1 and 2. Because these areas are already relatively intensively developed, new office construction could require the demolition of relatively large existing buildings. Because of the lower allowable FAR, new development would no longer be feasible on many of these sites.

Because of the overall reduction in allowable building size and the resultant smaller supply of new office space in the relatively more attractive locations, Subareas 3 and 4 and the south of Market Street portion of Subarea 5 would have a greater amount of new development under Alternative 3 than under Alternatives 1 and 2. The percentage of C-3 District office development forecast to occur in these three areas (23 percent) is half again their share in Alternative 1 (15 percent). The amount of office development for each of these three subareas would be greater for Alternative 3 than it would be for any other Alternative. This development would occur because of the large supply of vacant and non-intensively developed sites in these subareas and because some of the demand for space is forecast to shift to these areas.

The amount of space converted to office use from other uses would be higher in Alternative 3 than in any other Alternative, contributing 14 percent of the additional office space. This high rate of conversion would result from the need for office space arising from the reduced amount supplied in new buildings, from the reduced feasibility of demolition and new construction, and from the lack of constraints on such conversions.

The incentives for the provision of housing and the retention of architectural resources would not be important factors contributing to the supply of office space in this Alternative.

Alternative 4

The policies of Alternative 4 would result in 8.1 million sq. ft. of office building construction from 1990 to 2000 and a net addition of space in

office use of 7.0 million sq. ft. Among the five Alternatives, Alternative 4 would result in the lowest growth of C-3 District office space. The real increase in rents would be highest in this Alternative, relative to all the others.

The main factors responsible for the lower forecast are relatively low FARs, rezoning which reduces the area within the C-3 District, a policy designed to restrict the conversion of existing industrial buildings to office space, and high development costs. The cost of construction would not be directly affected by Alternative 4 policies. However, total project costs would be higher than project costs for the other Alternatives due to the requirement that housing be provided at a price affordable by all workers in the new office space.

The effect of building size restrictions would be relatively moderate in most of Subarea 1. There would be a large reduction in the size of buildings allowed in the northern portion of the subarea due to a rezoning which excludes the area north of Sacramento from the C-3 District. TDRs would be likely to be sold by owners of historic building sites on which the new development potential is reduced due to the policies of this Alternative. TDRs would be most likely to be used in Subarea 1 and would contribute somewhat to the supply of space there. Because Subarea 1 is the premium office rent area, development there would be less affected by the cost of the housing requirement than would development in other subareas. Also, the bonus office space from the provision of housing would be most valuable in the highest office rent area. As a result, almost three-fourths of the total new office space in the C-3 District is projected to be built in Subarea 1, the largest share for Subarea 1 among all the Alternatives. The amount of office space projected to be developed in this subarea, however, is about 40 percent less than in Alternative 1.

There is some uncertainty as to the policies with regard to Subarea 2./39/ It is assumed in these forecasts that development in Subarea 2 would be at FARs that are moderately below those permissible in the

central portion of Subarea 1. Moreover, the cost of complying with the housing requirement would be substantial and the value of the bonus office space would not be as great in this generally lower-priced office area. Thus, the supply of new office space would be reduced more than in Subarea 1.

Lower FARs in Subareas 6 and 7 together with the cost of meeting the housing requirement would contribute to a reduced supply of new office space in these subareas in Alternative 4.

The policies of Alternative 4 strongly limit development in Subareas 3, 4 and 5. Generally, they would keep development south of Market Street and west of Third Street to a very low FAR and would prohibit office development in the residential portions of these areas. Further, within the C-3 District, the cost of the housing requirement would put a greater relative burden on development in these subareas. The controlling policies for the south of Market Street area west of Yerba Buena Center would set specific low-rise FAR limits, ranging from an FAR of 1 to an FAR of 3./40/ The residential area in the Tenderloin (in Subarea 5) and the residential area south of Market (in Subarea 3) would be down-zoned, thereby effectively excluding office development. These are also the subareas in which office rents would not be nearly high enough to offset the costs of meeting the housing requirement. The combined impact of these policies would be to reduce new office development in these three subareas to about 20 percent of what it would be in Alternative 1.

Alternative 4 includes a policy that the "conversion to office use of... viable industrial buildings...shall be prohibited by ordinance"./41/ Such a policy would be very difficult to implement. The low supply of new space built (especially outside of the premium rent area) and resultant higher rents would create increasing pressure to use industrial space for office functions without the physical "conversion" that requires a permit. The space and employment forecasts developed for this Alternative assume that the no-conversion policy would be implemented effectively, but it is suggested that the policy would more likely be only

partially successful. Even its partial success, however, would make Alternative 4 the Alternative with the most industrial space retained in the C-3 District and the least amount converted to office use.

The relatively costly housing requirement which also applies to conversions, in conjunction with down-zoning, would further discourage conversions to office use under Alternative 4. These measures would limit conversions from uses besides industrial. There would still be the increasing pressures for "informal" conversions described above. Therefore, a minimal amount of existing space is forecast to be converted to office use in this Alternative, only about three percent of the net additional office space supplied.

The above discussion has noted the impact of the housing requirement on office development and conversion. The Alternative, however, also has an office bonus for the provision of housing. The value of this bonus would subsidize somewhat the cost of providing the housing, though this value would be an incentive only in desirable (high rent) office locations. In other words, the housing requirement without the bonus for providing housing would result in even less new construction.

Alternative 5

Alternative 5 would result in the addition of 7.4 million sq. ft. of office space in the C-3 District from 1990 to 2000, reflecting an increase of about 11 percent. This amount is most similar to the office growth forecast for Alternative 4 and lower than the forecasts for Alternatives 1, 2, and 3. Similarly, rents under Alternative 5 would be higher than rents under Alternatives 1, 2, and 3 and most similar to rents under Alternative 4. These impacts would be the consequence of several different policies contained in Alternative 5.

Alternative 5 proposes policies that are designed to redirect the location of future development, to preserve the scale, character, and architectural resources in certain portions of the C-3 District, to assure that future development is compatible with surrounding buildings and meets certain standards, and to encourage the development of housing

and the preservation of existing residential areas. Proposed policies would limit westward expansion of office buildings from the current financial district into the downtown's major retail area by down-zoning portions of the C-3-0 district to C-3-R. Alternative 5 also proposes special height limits to preserve the existing character of selected locations. Basic FARs generally would be lower under Alternative 5 than Alternative 1, and TDRs would play a role in Alternative 5 that is different from that in any other Alternative. One reason is that they would be the only source of office space above the basic FAR allowed. Another is that there would be no maximum FAR, allowing the addition of transferred space until height and bulk constraints limit the size of buildings.

Thus, very large buildings would be allowed when using TDRs from the retention of architectural resources or the provision of open space. Large buildings would also be allowed if housing were included since the housing space could exceed the basic FAR. In other situations, the combination of lower height limits and lower basic FARs would result in smaller buildings.

Alternative 5 has more design requirements than any other Alternative. These include specific requirements such as controlling upper floor bulk, assuring sunlight access to certain public spaces and sidewalks, and incorporating works of art in or near new buildings, as well as general conditions such as maintaining compatibility with surrounding buildings. These requirements would increase the cost of construction. Other design-related requirements such as providing open space could also add to the development cost of some projects.

Like Alternative 4, Alternative 5 proposes zoning changes from C-3 to R-C in portions of the Tenderloin and south of Market Street residential areas. Alternative 5 also includes a housing requirement. The cost of meeting the housing requirement would be less than for Alternative 4./42/

An additional unique feature of Alternative 5 is that two types of districts would be designated: downtown conservation districts and special development districts. The older parts of the downtown, those areas containing concentrations of architecturally and/or historically significant buildings, would be designated as conservation districts. (See Map 5, page B.5.31, Appendix B.) Large parts of Subareas 1 and 6 would be so designated. In these areas, conditional use review would be required in certain new development and alteration situations./43/ Special development districts would be designated around the Market - Van Ness area (Subarea 4) and the blocks between Howard and Folsom, east of Third Street (Subarea 2). (See Map 4, page B.5.20, Appendix B.) It is the intent of Alternative 5 to redirect office growth to these districts through the use of TDRs./44/

Alternative 5 would result in less development in Subarea 1 than any other Alternative. This is due to the combination of policies outlined above: height and bulk controls, more specific limits in selected areas, higher costs, and the exercise of conditional use review over many sites in conservation districts. These policies to limit the intensity of development and preserve existing resources in the Central office area have most affect on the development potential of the less-intensively developed sites. These are the sites most susceptible for new development, according to real estate market profitability considerations. Therefore, constraints on development on these sites would be an effective constraint on the supply of new space in the subarea.

The major example of the impact of such constraints on development in Subarea 1 is the difference between Alternatives 1 and 5 in the amount of space supplied in the Kearny Street corridor./45/ About one-quarter of the net new office space forecast for Subarea 1 under Alternative 1 would be in the Kearny Street corridor. Alternative 5 policies would result in 75 percent less new space in this corridor./46/

The large share of the total Alternative 1 forecast of development for Subarea 1 that would occur along Kearny Street indicates the extent to which office locations in this corridor are desirable in the real estate

market, as well as the high feasibility of new development due to the relatively small amount of existing space that has to be demolished. The reduction of space supplied here in Alternative 5 is attributable to two elements of the forecast for new development. First, just over one-third of the reduction would occur because development would not be feasible on some of the parcels in the corridor. The feasibility calculations are low because it would not be possible, within Alternative 5 constraints, to build a large enough building to make it worthwhile to demolish an existing building. In other words, some existing buildings along Kearny Street would be preserved under Alternative 5 that would not be preserved under Alternative 1. Second, the space supplied on parcels that would still be developed along Kearny Street would be about half of what it would be under Alternative 1, accounting for the other two-thirds of the difference between the two Alternatives.

In summary, as a consequence of constraints along Kearny Street and in other areas of special concern, as well as the intent to control the demolition of architectural resources in the conservation district, Alternative 5 would have less development in Subarea 1 than any other Alternative, moderately less than in Alternatives 3 and 4 and approximately half of that projected in Alternative 1./47/ In 2000, total Subarea 1 office space under Alternative 5 would represent about 92 percent of the total for Alternative 1. This difference in office space is primarily the trade-off for preserving architecturally significant buildings and older areas, such as Kearny Street.

New development in Subarea 2 would be constrained by a low basic FAR unless TDRs were used. The height limits are high, to encourage the use of TDRs. Substantially more space would be built in Subarea 2 under Alternative 5 than under Alternative 4, but, during the 1990 to 2000 period, not as much development would occur here as in Alternatives 1, 2 or 3. Among all five Alternatives, the share of total C-3 District office construction that occurs in Subarea 2 would be highest for Alternative 5.

The constraints on the supply of new space and the relatively higher costs of development under Alternative 5, in comparison with

Alternatives 1, 2 and 3, would result in higher rents for office space under this Alternative. Higher rents are part of the reason why development in Subarea 2 under Alternative 5 would not be more similar to development under Alternatives 1 and 2. The market demand for this area would not yet be strong enough at the higher rent levels to support more new construction in the 1990-2000 period. Market demand would be likely to increase over time, and, eventually, more intensive development, taking greater advantage of TDRs in the special development district, (generally Subarea 2), would occur. Time will be needed for upward pressures to build on Subarea 2 rents and for owners of architectural resource sites to evaluate the effect and permanence of the conservation district policies in deciding whether to sell TDRs to Subarea 2 developers./48/

Office development in Subarea 6 would be more limited under Alternative 5 than under any of the other Alternatives as part of the effort to constrain the westward growth of the office core to preserve the existing character of the Union Square area. To a large extent the reduction would be due to low FARs, protective height limits along Market Street, and special design requirements. Most of Subarea 6 would be covered by conservation district policies requiring conditional use review of proposed development to control demolition and maintain the character of the area.

From the perspective of the entire C-3 District, the amount of office space in Subarea 7 would be small under any Alternative. The least amount of new office development in this subarea would occur under Alternative 5. Lower height limits in this area would be the principal constraint on the supply of office space.

Alternative 5 would restrict large-scale office development in Subareas 3, 4 and 5. Though not as constraining as Alternative 4, it would control the expansion of the high-rise office core along Market Street, with lower height limits and R-C zoning in parts of Subareas 3 and 5./49/ Another factor affecting development in these subareas would be the

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higher costs of development, since it may be more difficult to support higher rents in portions of these peripheral areas of the C-3 District. Intensive development using TDRs is to be encouraged by the special development district (Subarea 4). However, there would not be enough office demand at rents which would justify a large amount of development in this subarea. Thus, it is not assumed that TDR policy would result in shifting development to this subarea, at least not during this time period. As a consequence of these factors, new office development in Subareas 3, 4 and 5 would be less than the forecasts for Alternatives 1, 2 and 3, but about the same as for Alternative 4.

Conversions to office space would contribute about 17 percent of the net additional office space under Alternative 5. Pressure for conversion would be high because the lower supply of new office space and subsequently rising rents would increase demand for an alternate, and lower cost, source of supply. Therefore, the amount of converted space would be intermediate among the five Alternatives, and, as a share of net additional office space, would be the largest. This would occur even though there are changes to R-C zoning which could effectively prohibit conversions in parts of Subareas 3 and 5. A substantial portion of the uses most susceptible to conversion lies outside the areas to be rezoned.

TDRs from the retention of an architectural resource would contribute to the supply of office space in Alternative 5. Their impact on supply would be limited, however, by several factors. Various development constraints would reduce the availability of sites for projects using TDRs in Subarea 1, the preferred office location, including the low height limits on Kearny Street and other selected locations, height and bulk considerations in the conservation district, and plaza requirements. The use of TDRs to gain more floor area would be more feasible in Subarea 2, but the market demand at higher rent levels would only support a limited amount of new development in Subarea 2 in the 1990 to 2000 period. The same rationale applies to Subarea 4, where the office demand to justify new construction at higher rents would be even less. Over the longer term, greater use of TDRs is likely to occur, particularly in Subarea 2.

Alternative 5 does include a housing requirement that would add to the cost of new office development in the C-3 District, although the increased cost would not be as great as in Alternative 4. The impact of the housing requirement is another factor in the development cost considerations for the feasibility of new development under this Alternative. Unlike Alternative 4, however, Alternative 5 does not contain an office bonus for the provision of housing. Therefore, the costs could not be offset by increased rentable commercial space.

Finally, besides using TDRs, the only way to exceed the basic FAR specified for Alternative 5 would be to add housing to an office building. This provision would not change the supply of office space, but would change the size of buildings.

Retail Space

The Alternatives would not affect retail space in the same way that they would affect office space. The Alternatives would not directly impact the potential of C-3 District retail development through policies governing the amount of retail construction and the costs of developing a new project. Instead, the effects of all of the Alternatives on retail activity are indirect and occur primarily through effects on employment growth and sales contributed by downtown workers, and on office building development and the space available for retail uses in new office buildings.

Forecasts of retail space in the C-3 District for the five Alternatives considered differences in retail sales attributable to different office employment growth forecasts. They also considered the small differences in tourist spending in the C-3 District because of differences in downtown hotel development among Alternatives. The contribution to C-3 District sales from city residents and other residents from elsewhere in the region was assumed not to vary by Alternative./50/ The resulting forecasts show differences in retail sales growth among Alternatives, although the differences would not be large (in the range of 10 to 12 percent). Appendix H (pp. H.41-H.47) discusses the retail

forecasts in detail and presents tables comparing forecasts of sales, space and employment.

Growth in retail sales supports increases in retail space. The amount of the increase in space depends on several factors, however. One is the amount of new space built in department stores or in other major free-standing retail development. This type of construction depends largely on the availability of suitable sites at preferred locations. The Alternatives would not have an effect on the construction of this type of space. A second factor is the amount of new space in office buildings that would be devoted to retail and restaurant use. Since there would be differences in the amount of office building construction among Alternatives, there would be proportionally similar differences in new retail space provided in office buildings./51/ A third factor is the amount of retail space added by changes in the use of ground floor space in existing buildings, and a fourth factor is that some of the growth of retail sales could be accommodated in existing retail space. The Alternatives affect these third and fourth factors to the extent that more sales would occur in existing space if less new space is built. Thus, those Alternatives with less retail space in new office buildings would result in greater increases in the growth of retail sales in existing space.

As a consequence of these considerations, the differences in retail sales growth among Alternatives are not as great as the differences in additional retail space.

Table V.B.6 shows the net increase in the amount of retail space during the 1990-2000 period under each Alternative. The new space includes a major department store, small shops and restaurants (separate from new office buildings and department stores) and retail space in office buildings (similar to Embarcadero Center and the Crocker Galleria, as well as small convenience shops). The total amount of net new retail space (accounting for retail space demolished due to new development) would range from 1.3 million sq. ft. in Alternative 1 to 0.8 million sq. ft. in Alternative 4. The range of percentage increase during the decade

1990-2000 would be as high as 15 percent (Alternative 1) to as low as 9 percent (Alternative 4). The amount of additional space would be relatively similar in Alternatives 1 and 2. Space supplied under Alternative 3 would fall in the middle of the range. The increased space under Alternatives 4 and 5 would be similar, about 40 percent less than the net new space under Alternative 1.

The difference in the magnitude of the effects on retail space and retail sales is illustrated by comparison between Alternative 1 and Alternatives 4 and 5. While the new retail space supplied under the latter Alternatives would be substantially less than that supplied under Alternative 1, retail sales growth would be only about 10-12 percent less in the Alternatives with less office development.

As explained above, there are two primary reasons for this difference. First, some of the increased retail activity due to C-3 District employment growth would take place in existing stores. This would result in greater sales per sq. ft. of existing space and possibly some changes from lower to higher sales volume tenants. Second, there would be more additional retail space provided in existing buildings.

The effects of the Alternatives on retail space can be summarized as follows. The amount of additional retail space provided varies among the Alternatives, although retail sales growth would be strong in all Alternatives. The differences among the Alternatives in the amount of additional retail space provided are primarily the consequence of less retail space supplied in office buildings in those Alternatives with lower amounts of new office development. Because the reduction in retail sales growth would not be proportional to the reduction in additional retail space, activity in existing retail space would be greater in the Alternatives with less office development (Alternatives 4 and 5).

Hotel Space

Table V.B.6 shows the amount of new hotel space provided in the C-3 District under each of the Alternatives. In Alternatives 1, 2, and 3, 2.4 million square feet of additional hotel space (3,900 rooms) are fore-

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cast. In Alternatives 4 and 5, 2.1 million square feet (3,400 rooms, 500 less than in Alternatives 1 and 2) would be provided. The increase in hotel rooms in the C-3 District from 1990-2000 would range from 16-18 percent, depending on the Alternative./52/

Hotel development in the 1990-2000 period would be more dispersed than the pipeline projects. A first class hotel (perhaps 700 new rooms) is projected to be added in Subarea 1. About 400 more moderately priced rooms are projected to be developed in Subarea 3. These two forecasts are included in all the Alternatives. The majority of new hotel space in the C-3 District would continue to be built in Subareas 5 and 6. The amount and distribution of new development would be somewhat affected by the Alternatives (although the underlying demand forecast supports generally strong hotel growth during the period, regardless of the Alternative).

In Alternatives 1, 2 and 3, 2,800 additional hotel rooms would be supplied in the prime hotel locations (Subareas 5 and 6). There would be no differences in the amount of new space supplied under these Alternatives. The only difference in the development pattern would occur under Alternative 3; hotel development would probably be somewhat more dispersed. The demand for hotel space in the C-3 District, however, would not be affected by Alternative 3 policies.

Under Alternatives 4 and 5, 15 percent less new hotel space would be supplied, or about 500 fewer rooms than under the other Alternatives. The smaller amount of development reflects building size constraints, the availability of suitable sites, and demand impacts related to less employment growth of office activity under these Alternatives. As in the other Alternatives, the majority of the new hotel rooms would be supplied in the prime hotel locations in Subareas 5 and 6.

Other Uses

Three uses show net decreases in space in the C-3 District during the 1990-2000 period (see Table V.B.6). Cultural/institutional/educational/other,

industrial/warehouse/automotive, and parking uses would each be increasingly subject to pressure from higher rent paying land uses as the level of activity in the C-3 District increased. Two of the Alternatives (Alternatives 4 and 5) include policies that are intended to control these pressures somewhat.

Cultural/Institutional/Educational/Other Uses

The decrease in space occupied by cultural/institutional/educational/other uses ranges from almost one million sq. ft. in Alternative 3 to less than 500,000 sq. ft. in Alternative 4. In all Alternatives, there are two components of this net decrease in space: demolition and conversion. "Other" uses contribute most to the overall decrease in space in this category. Space in the "other" category, as it appears in the Downtown EIR Land Use Inventory is, for the most part, vacant unoccupied space. Employment is forecast to grow in those activities that would use cultural, institutional and educational space; these activities would not be able to pay prime office rents, however. They are therefore forecast to shift to the lower rent subareas (Subareas 3 and 5) and to occupy converted "other" space or older office space./53/

Comparison of the changes in space in Table V.B.6 with the employment growth in Table V.C.3 demonstrates that the decrease in space does not necessarily represent declining cultural, institutional or educational activity. In Alternatives 1, 2, and 3, employment grows, although the net decrease in space is relatively high in these Alternatives. This is because vacant space, demolished for new construction, is a large proportion of the net decrease. Existing space would also be more intensively used in the face of these pressures, i.e. employment density would increase.

On the other hand, in Alternatives 4 and 5, both employment and space in these categories show net declines. This is primarily due to the effect of these Alternatives on conversions. By different means, each restricts the amount of space converted to office uses. Moreover, because of their constraints on new office space supplied and the

resultant higher rents, Alternatives 4 and 5 would result in more competition for converted space. Therefore, cultural, institutional and educational activities (at the lowest end of the rent paying scale) would not be able to find as much of this type of space in the C-3 District to accommodate either their growth or their shift out of the highest rent areas (Subareas 1, 6, and 7).

Industrial/Warehouse/Automotive Uses

During the 1990-2000 period, the amount of space in the C-3 District for industrial, warehouse and automotive uses is forecast to decrease due to both demolition and conversion to office use. The decrease would be greatest in Alternatives 1 and 3 and least in Alternative 4.

In all Alternatives, demolition is the smaller share of the decrease. The most demolition would occur in Alternative 3, since office development would be the most dispersed throughout the C-3 District. The magnitude of demolition of space of this type in all other Alternatives would be similar, about 20-30 percent of the demolition that would occur in Alternative 3.

Conversion of this type of space to office use would be most widespread in Alternative 1 and somewhat less in Alternatives 2 and 3. The least amount of conversion, only about 10 percent of that in the other Alternatives, would occur in Alternative 4. Alternative 4 would prohibit conversion of "viable" industrial buildings".^{54/} It would also rezone large portions of the subareas in which the prime candidates for conversion are located, Subareas 3 and 5, to discourage more intense development. Moreover, the cost of fulfilling the housing requirement, which would apply to conversion as well as new construction, would effectively prohibit conversions in this Alternative. Because of the high demand for lower rent office space under Alternative 4, there would be pressure for "informal conversions". Therefore, the amount of space converted might be somewhat greater than indicated here. Conversions of industrial, warehouse and automotive uses would also be relatively small in Alternative 5, because large portions of the subareas in which

the prime candidates for conversion are located would be re-zoned R-C instead of C-3. The change in zoning would have the greatest effect on potential conversions in Subarea 3. The impact on conversions of space in Subarea 5 would be less because much of the potential conversion space in this subarea lies outside the areas proposed for re-zoning.

Parking Use

The decrease in space for parking use in the C-3 District between 1990 and 2000 ranges from about 600,000 sq. ft. to about 300,000 sq. ft. Space used for parking would be lost as a consequence of new development. The most parking would be lost in Alternatives 1, 2 and 3, the least in Alternative 4.

It should be noted that the decrease in parking use shown in Table V.B.6 does not reflect any additional parking provided during the 1990-2000 period. It is likely that parking would be provided either as part of new projects or on the periphery of the C-3 District to replace some of the parking lost due to new development.

Upgrading and Demolition

In addition to new construction and conversion, the Alternatives would affect two other processes that occur as real estate market conditions change: upgrading and demolishing existing space. These impacts were included in the space forecasts and are summarized here on a District-wide basis.

Investment in Existing Space

Upgrading existing space does not result in net additions of space or in changes in use. Upgrading could result in changes in the types of tenants, types of merchandising, the physical appearance of the space, rents, and the number of workers employed in a given amount of space. This process is particularly applicable to office, retail and hotel space.

The most investment in existing space would occur under Alternatives that constrain the supply of new space relative to demand. The market pressure thus created would result in more intensive use of existing space. Following this rationale, upgrading existing space would be most extensive in Alternatives 4 and 5. Alternative 3 would have a moderate amount of upgrading. Alternatives 1 and 2 would have the least amount of this kind of real estate investment.

Demolition of Existing Space

Demolition of existing space is part of the new construction process./55/ It is a factor in the calculation of net change in space for each use during the 1990 to 2000 period. The total amount of space demolished would vary among the Alternatives. Those Alternatives with the most new construction would also have the most demolition of existing space.

The amount of space demolished as a percentage of new construction would also vary by Alternative. The proportion would be highest in Alternative 5. This is partly because the policies of this Alternative (compared to other Alternatives) would generally affect new construction on more of those sites with the greater development potential, usually sites with smaller existing buildings. The sites which could be developed would have larger existing buildings on the average. The result would be more demolition as a percentage of the new space built. This ratio would also be affected by the lower average FARs for new development under Alternative 5, to the extent that there would be less difference between the FAR of a new building and the FAR of the existing building demolished. Alternative 3 would have a similar ratio of demolition to new construction because this Alternative would also result in smaller new buildings relative to the size of buildings demolished. Alternative 4 would have the next largest ratio for similar reasons. The proportion of demolition to new construction would be lowest in Alternatives 1 and 2.

In all Alternatives, office space would be the largest component of the space demolished. This follows from the existing and forecast development pattern: most of the existing C-3 development is office space and most of the forecast new development would occur in Subarea 1, under all Alternatives. The distribution of demolition among retail, cultural/institutional/educational/other, and parking uses would be fairly similar for all Alternatives, representing the next largest components of the total space demolished. Much of the parking that would be lost due to new construction is on sites where uses have already been cleared, in the expectation of new development, and parking carried out as an interim use.

Industrial, warehouse, and automotive space would be a relatively small proportion of the space demolished in all Alternatives, except Alternative 3. There would be more of this type of space demolished under Alternative 3 because more new development would occur in the areas where most of this type of space is located, the outlying areas of the C-3 District.

All of the Alternatives would result in the demolition of some housing in the C-3 District. The most housing would be demolished under Alternatives 1, 2 and 3. Alternative 4 would require that all housing units lost due to new office development be replaced. This replacement requirement would be in addition to the Alternative 4 requirement that affordable housing be provided when office space is built. Consequently, developers would generally choose sites without existing housing, to avoid this additional cost.

Alternative 5 includes possible policies to prohibit demolition of existing housing but makes no specific recommendations, except R-C zoning in parts of the Tenderloin and south of Market Street. The feasibility analysis for new development indicates that some C-3 District housing would be under pressure for redevelopment in Alternative 5.

Residential hotel space is assumed not to be demolished under any Alternative, as the Residential Hotel Conservation Ordinance would be prohibitive in all Alternatives.

City and Region

This section discusses how the differences in C-3 District development under each of the five Alternatives would affect land use and development in the rest of San Francisco and the Bay Area region. In Business and Employment Impacts (Section V.C) the perspective in the city and regional analysis is that of the various business activities. For Land Use and Real Estate Development, the perspective is that of citywide and regional land use and real estate markets.

Office Uses

The major concern in this analysis is office use. The Alternatives primarily affect office development, and shifts in this use would have the most effect on market conditions in other locations. As discussed in the Employment Impacts section (V.C) many of the business activities that would not be in the C-3 District under certain Alternatives, could choose other City locations.

The differences between the Alternatives in terms of the office market elsewhere in San Francisco depend on development policies affecting these other areas. Some of the Alternatives specify policies for areas outside the C-3 District. Similarly detailed analysis of citywide development patterns was not within the scope of this study, however. The comments which follow indicate the nature of the differences due to the Alternatives and note how major policy differences for areas outside the C-3 District might affect the outcome.

Alternative 1 would provide for the greatest amount of office development in the C-3 District, compared to the other Alternatives. Development in other City locations would therefore be affected least by this Alternative.

The impacts of Alternative 2 would be similar to those of Alternative 1, though the policies and their application could result in some different effects. If the design requirements of Alternative 2 were to apply

throughout the City, their cost would place a relatively heavier burden on sites outside of the C-3 District and development could instead locate outside of the City. This follows from the fact that sites outside of the C-3 District would be more in competition with locations in other cities, with rental costs a key competitive factor. If, on the other hand, the design requirements that are applicable in the C-3 District were not required throughout the City, Alternative 2 policies would result in only a relatively small amount of development that would otherwise have occurred in the C-3 District being developed in other locations throughout the City.

Alternative 3 would have a larger impact on City office locations outside of the C-3 District. The smaller amount of office space supplied in the C-3 District under this Alternative would result in office demand elsewhere in the City that would have been satisfied in the C-3 District under Alternatives 1 and 2. There would be some increased pressure for the creation of office space in the neighborhoods and outlying mixed-use areas. More of the demand would choose other City office locations, such as the North Waterfront and Van Ness areas and, potentially, Mission Bay.

If the Alternative 4 housing requirement applies throughout the City, office development outside the C-3 District would be a small percentage of what it would be under any other Alternative, regardless of the reduced supply of space in the C-3 District. This is because the business activities unable to pay the higher C-3 District rents resulting from Alternative 4 policies would not be willing to pay similarly high rents elsewhere in the City.

The impacts of Alternative 5 depend on policies adopted with regard to potential office locations outside of the C-3 District. In particular, the policies for the area south of the C-3 District are critical. If development is facilitated in this area, then the majority of the moderate-cost office space that would not be developed in the western portion of the C-3 District due to Alternative 5 policies would occur in this area. If

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these shifts occurred, the citywide differences in office development between Alternative 5 and Alternatives 1, 2 and 3 would be much less than the differences in C-3 District development.

Office development elsewhere in the region is generally projected to continue at a strong pace. Differences among the Alternatives for the C-3 District would not have major effects on regional office markets. The predominantly high-technology office market in Santa Clara County would be relatively unaffected by the Alternative chosen for San Francisco's C-3 District, though San Francisco may compete for firms seeking headquarters office locations. San Mateo County has a large number of office sites ready for development, but absorption may not be as fast as the developers anticipate. Differences among C-3 District policies would not have a major effect on this market. Development in the northern part of San Mateo county would be most competitive with City locations outside the C-3 District. The East Bay office market, particularly in Alameda and Contra Costa counties, would be most affected by policy differences in the C-3 District. The effects would be greater in those Alternatives which result in a lower supply of C-3 District office space or higher rents. Relatively low cost office space in the East Bay would appeal to those unwilling or unable to pay the higher San Francisco rents.

Among the Alternatives, Alternative 4 would result in the greatest increase in demand for non-San Francisco office locations. In Alternative 3, as the supply of other City locations became scarce (after the 1990 to 2000 period) more demand would shift to regional markets. In Alternative 5, the amount of demand for non-San Francisco office locations could be similar to Alternative 4 if office development is not encouraged to shift south of the present C-3 District boundaries. The increasing use of TDRs (after the 1990 to 2000 period) to expand office supply away from the financial district core would imply somewhat less shift to alternate locations.

Other Uses

The choice of an Alternative would not affect the retail and hotel development forecasts for the C-3 District to the same extent that it would office development. Consequently, the impact of the Alternatives on other City and regional locations for this type of activity is not a major issue.

In the case of retail development, the principal effect of the Alternatives would be to shift the office-worker component of demand to other locations. If office space that would otherwise be in the C-3 District were developed elsewhere in San Francisco or in other Bay Area counties, retail development would also take place there to serve the office workers. This development would not necessarily be in the form of newly constructed shops and restaurants. As in the C-3 District, sales may increase in existing retail establishments and the mix of shops and restaurants might change to satisfy new customer demands.

Hotel development in the C-3 District is, for the most part, independent of the Alternatives. With the exception of business travel, the Alternatives would not directly affect tourist activity in the City. In Alternatives 4 and 5, with business travel reduced due to less office development than the other Alternatives, some hotel development might shift to other City locations outside the C-3 District depending on the shifts in office activity.

Cultural, institutional and educational uses would increase in San Francisco neighborhoods, further south of Market Street and perhaps in other cities near San Francisco (e.g. Oakland, Berkeley, or San Rafael) as competition for office space in the C-3 District increased. In any location, these activities are most likely to locate in existing buildings and space converted from other uses.

The effects of the Alternatives on industrial, warehouse and automotive uses would be to hasten or slow (but not stop) a long-term shift of these activities away from central, increasingly valuable, locations. It is

difficult to say whether these uses leaving the C-3 District would prefer to move just outside the area or farther out towards South San Francisco and Daly City or the East Bay. Parking facilities to replace some of those removed for new development would probably be built outside the C-3 District.

Long Term Perspective

Beyond the year 2000, it is likely that the differences in C-3 District development among Alternatives would become smaller over time. There are several reasons for these changes.

Over time, development could become more feasible in locations to which an Alternative seeks to redirect growth. This would occur as development takes place in more outlying locations thereby enhancing the acceptability of such locations and raising obtainable rents. For example, after 2000, there is likely to be proportionally more office development in Subarea 2 under Alternative 5 as compared to Alternative 1 than is forecast from 1990 to 2000. Generally, to the extent that the forecasts for 1990 to 2000 include an adjustment period for some Alternatives (the lower growth Alternatives), future growth would not be similarly affected once those market adaptations occurred.

Secondly, the higher growth Alternatives would eventually experience slower growth as portions of the C-3 District become fully developed. As this occurs there would be less future differences in development among Alternatives. For example, office development in future decades under Alternatives 1 and 2 is likely to become more similar to the amount of office development under Alternatives 3 and 5 than are the forecasts for the 1990 to 2000 period. The specific reasons vary by subarea and by Alternative. For example, if Alternative 1 is compared to Alternative 5, the lower amount of office development in Subarea 1 from 1990 to 2000

under Alternative 5 can be partly explained by that Alternative's policies to preserve sites with historic buildings. Once those sites were developed under Alternative 1, there would be less future differences between the Alternatives, since these types of sites would not provide development opportunities in either case.

A third consideration regarding the long term perspective on the Alternatives concerns the future quality of the environment in the C-3 District. If the policies of an Alternative are successful in preserving or enhancing the C-3 District's environment relative to the quality of the environment under other Alternatives, the differences between these Alternatives could change over time. In other words, there could be less difference in long term economic growth to the extent that less growth in the short term resulted in an enhanced environment over the long term that retains or attracts economic activity that would not otherwise occur in the C-3 District. This factor may have most effect on retail and hotel/tourist activity in the future. For example, if the preservation of historic buildings or the maintenance of pedestrian scale and sunlight are achieved by the policies of Alternatives 2 or 5, future retail and tourism activities in the C-3 District could be higher under these Alternatives relative to Alternatives 1 or 3. Since it will take several decades for new policies to result in a physically different environment, the effects of environment on economic activity are not included in the 1990-2000 forecasts.

After 2000, the combined effects of these factors are likely to narrow the differences in the amount of development and economic activity among Alternatives. The most change is likely to occur in the relative ranking of Alternative 5. Alternative 5 is likely to become more similar to Alternatives 1, 2, and 3 and less similar to Alternative 4 over time. Alternatives 1, 2, and 3 are likely to become more similar to each other. Less change is likely to occur in Alternative 4 relative to the other Alternatives.

INCENTIVES TO RETAIN ARCHITECTURAL RESOURCES

Introduction

The Alternatives all reflect concern about the preservation of architectural resources. They differ, however, in their incentives and requirements. The provisions for the five Alternatives are summarized in Table III.2.

Alternative 5 is the only Alternative that includes more than the current architectural preservation regulations provided in Article 10 of the City Planning Code. In addition to current regulations regarding the preservation of designated landmarks, Alternative 5 would require conditional use review of new development proposals in the "conservation districts" (see Appendix B, Map 5) established under that Alternative, if the project would result "in the destruction or substantial alteration of a significant building..."/56/ One of the tests for the authorization of the permit would be whether or not "reasonable use" could be made of the significant building./57/

All the Alternatives provide transferable development rights (TDRs) in return for the property owner foregoing the right to develop the site of a designated historic building. Alternative 2 provides the largest amount of TDRs for most sites, as it offers TDRs equal to twice the "unused FAR."/58/ In addition, the preservation of a building with an "A" designation in the Foundation for San Francisco Architectural Heritage's list of historic buildings results in a 100,000 sq. ft. TDR bonus. The other four Alternatives offer TDRs equal to the unused FAR, except that Alternative 3 provides for minimum TDRs of 50,000 sq. ft. and maximum TDR's of 100,000 sq. ft. from any one historic building. In the Alternatives which have a maximum FAR (Alternatives 2, 3 and 4), the use of TDR's in a new development project must respect these limits, as well as height and bulk limits.

The availability of the TDRs provided in Alternatives 1 and 3 is restricted by location. In Alternative 1 the project utilizing the TDRs must be located on or adjacent to the parcel of the historic building. Alternative 3 requires that the new building be within 500 feet of the historic building.

Alternatives 4 and 5 include requirements regarding treatment of the historic structures from which TDRs are transferred. Alternative 4 requires that provision be made for the maintenance of the building from which TDRs are transferred. Alternative 5 requires that the building supplying the TDRs be restored and seismically reinforced as needed. Both Alternatives offer supplemental TDRs as the Planning Department determines are necessary to enhance the feasibility of the restoration. In Alternative 4 the supplemental TDRs are limited to 25 percent of the space in the historic building. In Alternative 5 the supplemental TDRs may be granted up to 50 percent of the private space plus 100 percent of the public space in the historic building.

Independent of City policies or the Alternatives, the 1981 and 1982 revisions to the Internal Revenue Code provide an incentive to rehabilitate rather than to demolish historic buildings listed on the National Register of Historic Places or certified as eligible for listing. The incentive is an investment tax credit equal to 25 percent of the cost of rehabilitation./59/ Based on analysis using the real estate feasibility model developed for this study, the value of this tax credit would appear, in general, to be small in comparison with the potential value gained from new development on typical C-3 District sites. Furthermore, the value of TDRs from most historic buildings could be greater than the value of the tax credit. Thus, the tax credit is not likely to be the major consideration in the rehabilitation of a structure which would otherwise be demolished for new construction. The ability to sell TDRs would be a more important incentive. Although to claim the investment tax credit the property owner/developer must commit to a higher rehabilitation expense than would be necessary with the TDR programs (due to the requirement that expenditure tests and specific standards be met), the financial value of the tax credit and its availability prior to

the return from a new development project could enhance the preservation option in some borderline situations. Analysis of the effect of the investment tax credit on the rehabilitation versus demolition/new development decision is included in Appendix G.

The forecasts of office development for each Alternative set forth earlier in this section included the effect of the TDR programs. The effectiveness of TDR programs in shifting the location of new office development would be limited in all Alternatives, except Alternative 5. Even though TDRs could provide a substantial amount of the office space supplied, as in Alternative 2, the demand for space would place an upper limit on their use. The greater effect in Alternative 5 is due to the additional policy commitment to the preservation of architectural resources through conditional review of development projects in the conservation districts (generally the preferred office locations), and associated down-zoning in specific sensitive areas. The resulting shortage of sites in these locations would result in lower forecasts of new office development, except for the opportunities provided through the TDR program.

General Conclusions Regarding the Impacts of TDR Programs

Appendix G discusses the real estate feasibility analysis of the impacts of the TDR programs of the Alternatives in a variety of development cases./60/ The conclusions of that analysis are summarized below.

- When useable TDR's are created, those entitled to them (the owners of designated buildings smaller than the allowable FAR on the site) compete to sell them to potential users (builders of office projects) who compete to buy them. The value lost in foregoing new development is the minimum price a seller must receive. This amount varies considerably, depending on the location of the site and the characteristics of the building. The value of TDRs to a builder is the maximum price a buyer can afford to pay. This amount varies less, but does depend on the rents achievable at the buyer's project site.
- The cost to the owner of an historic building of foregoing development on the site is very small if it appears that demolition and redevelopment would not be profitable or would be only marginally profitable. The cost to the owner is very large if development would be highly

profitable. Therefore, the owners of buildings for which demolition and redevelopment are judged to be unlikely can afford to sell TDRs for the lowest prices. TDRs would thus be sold from such buildings before they would be sold from buildings more vulnerable to new development.

- Following the conclusion immediately above, the closer the FAR of the designated building is to the allowed FAR on the site, the lower the cost per unit of TDRs would be. TDRs would be most costly per unit from small buildings on sites with large allowed FARs because the development potential foregone would be great./61/

In other words, small buildings, such as bank temples and the Pacific Stock Exchange building, would be less likely to be saved from demolition through a TDR program than large buildings, such as the Russ Building and the Mills Building.

- Again following the second conclusion above, the cost per unit of TDR would be lower from buildings in areas with low or moderate prevailing rents (marginal development sites), unless there are prohibitions against transfer from lower rent to higher rent areas./62/ In other words, buildings outside of the higher rent areas would be more likely to be preserved through a TDR program than buildings in preferred office locations.
- TDRs are much more valuable when they can be used in the higher rent areas (Subarea 1). Therefore, the availability of TDRs would encourage development in these areas. Because Subarea 1 is already the most intensively developed area, a TDR program would, to some degree, threaten the demolition of more and larger existing undesignated buildings in that area.
- Consideration must be given to the relationship between the demand for and the supply of TDRs. An over-supply would drive down TDR prices and defeat the purpose of the TDR program. An excess of demand would not raise TDR prices above their value to users, measured as the additional value gain that could be achieved on the project site through additional office space from TDRs.
- TDRs compete with other bonuses available to a developer. The more other bonuses are available, the less value the market would place on TDRs and the less effective the TDR program would be in preserving historic structures.
- The benefit available from selling TDRs equal to unused FAR, the basic incentive in Alternatives 1, 3, 4, and 5, is often not sufficient to offset the loss of value gain

from development, particularly for low to moderate FAR buildings in preferred locations./63/ In other words, many such buildings would still be demolished. The combination of demolition prohibitions with TDRs (to mitigate economic consequences) would be the most effective means of preserving historic buildings.

- The use of TDRs will only take place, except where demolition is not allowed, when the values of both the new development and the historic building are increased as the result of the additional office space to the new project and the payment for TDRs to the owner of the designated building. As a result, property owners would receive a windfall, sometimes large and sometimes small, as a result of a TDR program.
- The success of a TDR program would be enhanced through the choice of relatively simple policies adhered to for an extended period of time. It is likely that the program would function best if a public or quasi-public agency could facilitate the establishment of a market in which TDRs could be bought and sold.

Conclusions Regarding the TDR Programs of the Alternatives

This section focuses on the effectiveness of the TDR programs proposed for each Alternative. Effectiveness is considered from the perspective of whether TDRs would be utilized and thus architectural resources saved. Estimates of the number of historic buildings that would be threatened by demolition under each Alternative are discussed in Section V.H.

Alternative 1

TDRs would be seldom used under the policies of Alternative 1. They are most likely to be used if a fairly large building is adjacent to a prime building site. A current example is the use of TDRs from the Hallidie Building for the 333 Bush Street project.

Alternative 2

The reduced development potential in this Alternative (primarily due to lower FARs compared to Alternative 1) results in lower potential value gain from demolition and development on a given site compared to

Alternative 1. However, the two-for-one bonus would increase the potential total value of the TDRs generated by an historic building. It would therefore make the preservation decision more attractive to owners of designated buildings. The extra bonuses for an "A" building makes it especially unlikely that any of these would be demolished.

The potential number of TDRs created in Alternative 2 is at least twice as large as in the Alternatives with a one-for-one bonus because owners of historic buildings have more incentive to sell TDRs. Alternative 2 also provides a large number of other office development bonuses with which TDRs would have to compete. Therefore, it is likely that there would be an over-supply of TDRs.

Alternative 3

The lower FARs for new development would reduce the potential value gain for most sites, lowering the price the owner of an historic building must receive to justify selling TDRs. The TDRs could only be used within 500 feet of the historic building; it is thus probable that fewer historic buildings would be saved under this program. Smaller buildings in Subarea 1, in particular, would be likely to be demolished.

Alternative 4

The effect of the Alternative 4 TDR program on the preservation of architectural resources buildings that would otherwise be demolished is intermediate between Alternative 2, in which TDRs are twice the unused FAR, and Alternative 1, in which no TDRs are available except from adjacent sites. The relatively low value gain from new development indicates that the owners of historic buildings would be more likely to sell TDRs rather than to choose new development. The incentives of the TDR program in Alternative 4 are estimated to result in about half of the historic structures being retained that would have been demolished without the availability of TDRs.

Alternative 5

The TDR program in Alternative 5, without consideration of the restrictions on demolitions, would be moderately more effective in preventing the demolition of historic buildings than Alternative 4. In Alternative 5, TDRs are the only means of increasing the basic office FAR allowed; other bonuses would not compete with them to lower their value.

If the Planning Commission, in its conditional review, chooses to restrict the demolition of historic buildings in the conservation districts, Alternative 5 would offer the most effective means of preserving historic buildings in these areas.

The program to encourage developers to utilize TDRs from Subareas 1 and 6 in Subareas 2 and 4 would not be very effective. The TDRs are not valuable in Subarea 4, generally an area of weak market demand. The TDRs would have more value in Subarea 2, but not as much as in Subarea 1. Developers would thus only use TDRs from Subarea 1 buildings in Subarea 2, as they conclude that Subarea 1 sites are not available.

HOUSING DEVELOPMENT

Introduction

During the 1984 to 1990 period, just over 2 million sq. ft. of housing is projected to be provided in the C-3 District, under any Alternative. This represents an addition of about 1,380 new housing units. Most of this residential development is attributable to Yerba Buena Center. The majority of the housing not in YBC is incorporated in office projects. (See Table V.B.1.)

The development of housing in the C-3 District during the 1990 to 2000 period would be affected by the housing policies included in the Alternatives. Each Alternative, with the exception of Alternative 1,

includes incentives to produce housing. These incentives include allowing additional office space to subsidize the cost of producing housing. Alternatives 4 and 5 also include requirements for providing housing as a condition of office development.

The discussion which follows summarizes the housing policies of each Alternative and identifies the potential impact of the incentives and the requirements on housing prices and housing development. Projections of the number of C-3 District housing units to be produced in the C-3 District from 1990 to 2000 under each Alternative are presented and discussed./64/

Housing Production and Housing Costs/Prices

Analysis was done to test the potential effects of the housing incentives of the Alternatives. For each Alternative, calculations were made to determine the potential cost (to a developer) of producing housing units, utilizing the office space bonuses (if any) provided by the Alternative. In other words, potential housing production costs were estimated by assuming that the increased value from the bonus office space would be used to subsidize the production of housing. The analysis of housing incentives was also used to test how the incentives would affect the cost of meeting a housing requirement.

Based largely on this analysis of housing incentives and requirements, forecasts of housing production were prepared for each Alternative. Forecasts of the amount of residential space and the number of units likely to be built in the C-3 District are presented in Table V.B.9./65/ The forecasts are shown by subarea for each Alternative, 1990-2000.

The forecasts of housing production reflect assumptions about the way in which the housing requirements of Alternatives 4 and 5 are most likely to be fulfilled. Those assumptions are discussed in the text which follows and described in more detail in Appendix G (see particularly Table G.11).

TABLE V.B.9: C-3 DISTRICT HOUSING DEVELOPMENT, BY
ALTERNATIVE, 1990-2000

Space by Subarea (Thousands of Gross Sq. Ft.)	Alternative				
	1	2	3	4 (a)	5 (a)
1	130	520	660	900	200
2	---	---	---	90	---
3	---	495	---	640	112
4	---	180	---	320	---
5	150	540	135	640	320
6	---	45	---	85	48
7	50	200	50	270	200
Total (b)	330	1,980	845	2,945	900
 <u>Number of Units By Subarea</u>					
1	100	400	600	1,000	200
2	---	---	---	100	---
3	---	550	---	800	150
4	---	200	---	400	---
5	150	600	150	800	400
6	---	50	---	100	50
7	50	200	50	300	200
Total (b)	300	2,000	800	3,500	1,000
 <u>Average Sales Price Per Unit (1982 dollars) (c)</u>					
	\$277,000	\$201,000	\$239,000	\$122,000	\$162,000

NOTE: The estimates of housing development in the C-3 District are based on analysis of the housing incentives and requirements of the five Alternatives. The estimates presented here should be viewed as describing a possible scenario developed primarily for purposes of highlighting the differences among Alternatives. The housing development shown here would not all represent net additions to the housing stock in San Francisco (see Section V.D. and Table V.D.3). Some would represent units which would be built elsewhere in the City if not in the C-3 District.

TABLE V.B.9: C-3 DISTRICT HOUSING DEVELOPMENT, BY
ALTERNATIVE, 1990-2000 (Continued)

- (a) This table shows only the new housing to be provided in the C-3 District. Alternatives 4 and 5 include housing requirements which would also result in other housing being developed elsewhere in the City and in some rehabilitation of existing housing units. This other housing is discussed in the text and described in Appendix G (see particularly Table G.11). It should also be noted that the forecasts of C-3 District housing development shown here include housing built by City housing programs using funds collected from in-lieu contributions to a City housing program as an option for meeting the housing requirement.
- (b) The relationship between the number of units built and the amount of space in those units describes the overall average space per unit built. The size of units is assumed to vary by the type/quality of units developed in each subarea under each Alternative. (Also see note 65.)
- (c) The average sales prices per unit by Alternative are overall averages reflecting the mix of types of units in an Alternative, as well as the prices for each type of unit under that Alternative. The range of unit prices would show large variation on either side of these averages. It is possible that some units could be rented instead of sold, although separate estimates of rent levels were not developed. The average prices are shown here for purposes of highlighting the overall differences in housing produced among the Alternatives not for purposes of evaluating how these units are likely to "match up" with consumers with various demographic characteristics.

SOURCE: Recht Hausrath & Associates

The prices at which new housing units would be sold largely depend on the regional and citywide housing markets. Even if the housing incentives would make it possible to produce housing at substantially lower production costs, the units would be sold at market prices. Developers are unlikely to choose prices significantly below the market level unless constrained by controls adopted as a part of an Alternative. Further, the housing sold at below market levels would not remain priced at these levels unless resales were controlled by policy.

The analysis of the costs of producing housing under various housing incentives and requirements was combined with recent housing price data and the controls (if any) proposed as a part of an Alternative to estimate the likely prices of new housing. Average new housing prices were estimated for each Alternative based on the above analysis, as well as consideration for the number of units to be built of various types and unit sizes, and the general location of the housing development in the C-3 District. Estimated average sales prices for new housing under each Alternative are summarized in Table V.B.9.

Several considerations should be kept in mind throughout the discussion of housing production in this subsection. The first is that the different Alternatives include a variety of bonuses in office space allowed: for retaining architectural resources, for providing public plazas, for energy conservation, etc. Within any one set of land use policies for the C-3 District, different bonuses would compete with each other; developers would take advantage of some more than others, depending on the circumstances of the project. Alternative 2, in particular, offers a variety of office space bonuses that would compete with the bonus offered as an incentive to produce housing.

The second consideration is that the number of units projected to be developed for each Alternative do not all represent net additions to the City's housing stock. Many of the units would be occupied by households who would have caused new units to be built even without the policies of the Alternative. Section V.D addresses the issue of net units developed due to housing policies and estimates this number of units for each Alternative (see Table V.D.3).

Finally, and most important, it should be remembered that the estimated prices and the number of units projected to be built can be only rough approximations. Many factors are involved that are certain to change over the next decade. The estimates presented herein allow comparison of the potential effects of the housing policies of the various Alternatives; they are not precise calculations.

Alternative 1

Alternative 1 does not require that housing be produced as a condition for the construction of office space. The policies of this Alternative also provide no bonus office space for the provision of housing. The projected cost of supplying housing in the C-3 District is thus highest for this Alternative. Typical prices for new housing would also be highest for this Alternative.

The profitability of office development in Alternative 1 would result in high land prices in the C-3 District. These high prices would discourage the development of housing. With high land prices and without any housing production incentives, it is estimated that only about 300 units of housing would be constructed in the C-3 District under Alternative 1./66/ The most likely locations for the housing would be in Subareas 1, 5 and 7.

Alternative 2

Alternative 2 also does not require that housing be provided as a condition of office development. This Alternative does, however, provide an incentive for the provision of housing, in the form of a bonus of one extra square foot of office space, in addition to that allowed by the basic FAR, for each square foot of housing built.

Any one project cannot receive a bonus in excess of 100,000 sq. ft., but this would not be a limiting factor for most new development. The housing constructed must be located in the C-3 District or be affordable by low-moderate income households, with a double bonus if low-moderate income housing is provided in the C-3 District.

The forecasts shown in Table V.B.9 indicate that about 2,000 units would be built in Alternative 2. This projection assumes that the TDR bonuses proposed would be modified to some extent, as the ability to use TDRs in the C-3-0 area from throughout the C-3 District would offer strong competition to the incentive to produce housing. About one-third

of the units would be located in Subareas 1 and 7, almost all of them incorporated into office projects. These units would be designed to obtain premium prices. The majority of the units would be located elsewhere, allowing the maximum amount of office development on the sites in the preferred office area. As with the other Alternatives, office space bonuses for producing housing would primarily be used to increase the size of office projects in the C-3-0 area.

The office space bonus for producing housing would also result in a lower average sales price for units produced under Alternative 2. As shown in Table V.B.9, the average sales price for Alternative 2 housing is below the average price for units built under Alternative 1. This difference would result from two factors. One is that a lower percentage of the units built under Alternative 2 would be high quality units in the prime office area (Subarea 1). The other and more important factor is that the office space bonuses, by allowing development of office space in excess of other basic limits, would provide subsidies to reduce housing production costs. Lower costs of producing housing would make it possible to sell units at lower prices (or rent them at lower rents). The bonus has the potential for reducing the costs of producing housing as low as one-half of what would be the case without the subsidy from the increased office space allowed. Although some units could be marketed at these low prices, it is assumed that on the average, housing prices for similar units would be about 20 percent lower because of the office bonus provisions of this Alternative./67/

Alternative 3

Housing production is not required as a condition of office development in Alternative 3. The policies do provide for a one-to-one office space bonus for the provision of housing (one sq. ft. of office for one sq. ft. of housing). The housing, however, must be located within 500 feet of the office space, a stipulation that would result in the housing built being located primarily on sites as part of a mixed office-residential development.

Due to the relatively low basic FAR of Alternative 3, the office bonus could provide up to 75 percent more space on a site, generally half of the additional space in office use and half in residential use. As a result of the higher amount of office space allowed, housing could be provided at lower prices, even lower than in Alternative 2 in the preferred office location (Subarea 1). In lower rent areas, where the additional office development results in smaller value gains, the bonus would not contribute as large a subsidy to housing costs. Thus, under Alternative 3 the average price of units built in Subarea 1 would be about 25 percent lower than similar units built under Alternative 1. The price of units built in the other subareas would be about the same as in Alternative 1. The overall average price of all units (shown in Table V.B.9) reflects the mix of types of units and the prices of each type.

Eight hundred new housing units are projected for the C-3 District for Alternative 3. Three-fourths of these would be located in Subarea 1, because the housing must be located within 500 ft. of the office project to qualify for the bonus and the office bonus is a stronger incentive in Subarea 1 (where rents are highest) than in any other subarea. The remaining 250 units located in Subarea 5 and 7 are the same number of units projected for these subareas in Alternative 1.

Alternative 4

Alternative 4 requires that housing be provided as a condition of building office space. One unit of housing must be supplied for each 1,000 sq. ft. of office space, and the housing must be affordable by the persons that would be working in the offices. The housing can be located anywhere in the City. This housing requirement can alternatively be fulfilled by (1) the rehabilitation of housing which would subsequently be available for low income households or (2) by a in-lieu contribution to a housing program equal to the average down-payment for residences sold in the City.

The cost of complying with this housing requirement is difficult to estimate. This analysis has assumed that the cost would be about \$20,000 per unit, not yet considering the impact of the office space bonus for building housing./68/ The cost of the requirement would be affected by the procedures for making in-lieu contributions. For example, if an office developer were allowed to make in-lieu contributions to satisfy the housing requirement for the lower income office worker households and to build housing for the higher income households, the overall cost of meeting the requirement would be lower than if this type of arrangement were not permitted.

Alternative 4 provides a bonus of one square foot of office space for each square foot of housing constructed, an incentive which reduces the cost of meeting the housing requirement. The provisions of the bonus are the same as they are in Alternative 2, except that it is the intention that the office developer be actively involved, rather than merely subsidizing financially the development of the housing.

Applying the same financial analysis used to estimate the cost of producing housing in Alternatives 1, 2 and 3 yields a conclusion that small housing units in mixed office-residential projects in the preferred office area could be provided for close to \$40,000 and housing elsewhere in the C-3 District for as low as \$70,000. The cost for units in the preferred office area is the lowest of all the Alternatives. The reason is the relatively large maximum FAR for office development compared to the basic FAR limit, with the former being twice the latter, allowing substantial room for bonus office space. This results in relatively large increases in the value gain from office development up to the maximum FAR if housing is produced, compared to development at the lower, basic FAR, without the office bonus for housing.

The above analysis indicates that because of the office bonus the developer would be likely to develop housing to meet the housing requirement, except for the low income units, rather than to make an in-lieu contribution on the order of \$20,000 per unit. Because the bonus makes the housing development option preferable, and requires that the

portion of the housing which is not affordable by low-moderate income households be located in the C-3 District, there would be a large demand for appropriate housing sites in this area. Unless significant portions of the C-3 District were to be rezoned, housing would have to compete for sites with office buildings, hotels, etc. This would add to costs, thereby offsetting some of the advantages of the bonus.

The policies of Alternative 4 would result in more housing development in the C-3 District than any other Alternative. Because many of the units would have to be subsidized to meet the affordability condition, the units would also represent a much greater net addition to the City's housing stock. In other words, there are likely to be more units that would not have been built at similar prices except for the policies of Alternative 4./69/

The total projected C-3 District development in the 1990-2000 period is 3,500 housing units. Five hundred of the units are expected to be units resulting from developer contributions to the City's housing program. These units are projected to be built in Subareas 3 and 5. One thousand of the units produced by office developers are projected to be in Subarea 1. The remaining 2,000 units are distributed among the other six subareas, with the numbers in each subarea ranging from 100 to 550 units. Because of the requirement that housing be affordable to office workers and because of the office bonuses provided for housing development, housing prices for units built in the C-3 District would be the lowest under Alternative 4.

In addition to the housing built in the C-3 District, another 2,200 housing units would be built elsewhere in the City to meet the housing requirement of this Alternative./70/ Further, about 1,900 other units would be rehabilitated because of the C-3 District housing policies.

Alternative 5

Alternative 5 requires that the developer of office space be responsible for the provision of housing. The amount required is estimated at about 0.9 housing unit for every 1,000 sq. ft. of office space. Alternative 5

V. Environmental Impacts

includes the stipulation that the housing be subject to the same low-moderate income affordability requirements as any other housing built in the City. The provisions of the City's general low-moderate inclusionary housing policy would therefore be a critical factor in determining the cost of complying with the office-related housing requirement.

The City currently maintains an Office Housing Production Program. This program sponsors the development of housing, using resources such as residential mortgage bonds and subsidy funds to make the housing more affordable to consumers. The City's current expectation is that an office development may make an in-lieu contribution of \$6,000 per housing unit to this program to mitigate the project's housing impact. Therefore, an average cost of \$6,000 per housing unit, or \$5.40 per sq. ft. of office space is assumed to be the cost to the office space developer of meeting the housing requirement of Alternative 5.

No bonus office space is provided in Alternative 5 for the development of housing. Housing provided in mixed office-residential projects, however, is not counted against the space allowed under the basic FAR. Alternative 5 therefore provides a modest housing subsidy compared to the policy in Alternative 1, but does not provide the more substantial subsidy of housing costs that would be provided by the policies of Alternatives 2, 3 and 4.

Since less subsidy is provided for housing development, it is assumed that a large share (about 65 percent) of the housing required due to forecast office development would be met by contributions to the City's housing fund.^{/71/} While developers could potentially build and sell housing without a subsidy, the in-lieu contribution for credit towards the housing requirement is likely to be an attractive option to many developers. Office developers generally are not also in the business of developing housing. The uncertainty of the housing market in the future may deter other developers. Still others may find the contribution to be a relatively small cost to avoid the potential difficulties of finding a site and producing housing. The balance

(about 35 percent of the total requirement) is likely to be accounted for by privately developed housing. Overall, more housing is likely to be located outside the C-3 District than within the downtown area since there is relatively little incentive to develop in the higher cost downtown locations.

It is projected that about 1,000 housing units would be constructed in the C-3 District under Alternative 5 (see Table V.B.9). About half of these would be sponsored by the City and the other half privately developed. Another 1,640 units are estimated to be built elsewhere in San Francisco and about 900 units would be rehabilitated.^{/72/} Average prices for units built in the C-3 District would be higher than those for Alternative 4 but lower than prices for Alternatives 1, 2 and 3.

City and Region

All of the Alternatives except Alternative 1 have incentives for office developers to produce housing. The incentives, however, do not apply for housing located outside of the C-3 District and thus will not directly affect housing elsewhere in the City.^{/73/}

Alternatives 4 and 5 include requirements that office developers produce housing. Because the Alternative 4 incentive for the development of housing in the C-3 District is so strong, it is projected that the large majority of the units to be built or rehabilitated under the Alternative 4 housing requirement would be located within the C-3 District. For Alternative 5 it is projected that the majority of the units built and rehabilitated would be located elsewhere in the City. Appendix G (see Table G.11) shows a scenario of the housing developed in the C-3 District and elsewhere in the City, identifying the units produced as a consequence of the housing requirements of Alternatives 4 and 5.

The Housing Section, V.D, includes a discussion of the extent to which the housing units produced under the housing policies of the Alternatives would be net additions to the City's housing stock, rather than substitutions for units that would have been built without the

policies (see Table V.D.3). The discussion concludes that the policies of Alternatives 2, 3, 4, and 5 would result in more total housing built in the City. However, there would also be a shift of some housing that would otherwise have been built outside of the C-3 District to within it.

From a regional perspective, the general effect of the housing programs of Alternatives 2, 3, 4 and 5 would be to increase the total amount of housing in the region and to shift an amount greater than that increase into the City of San Francisco.

NOTES - Land Use and Real Estate Development

- /1/ Projects under construction as of mid-1982 and to be completed by 1984 are included in the 1984 land use and real estate setting (see Table IV.B.8).
- /2/ The uses assumed for development in the Yerba Buena Center Redevelopment Project Area (YBC) are those defined by the YBC Main Program Alternative. A map showing the YBC Redevelopment Project Area within the C-3 District is included at the end of Appendix G, Figure G.3.
- /3/ A listing of pipeline projects is included in the appendix to the Downtown EIR Land Use Inventory, a copy of which is available for public review at the Department of City Planning, 450 McAllister Street, Room 400.
- /4/ The employment forecasts are presented in Section V.C, Business and Employment Impacts. The methodology and basis for the forecasts are summarized in Appendix H, as is the procedure for "matching" employment growth and pipeline projects (see particularly pages H.37-H.39).
- /5/ It should be noted that the finding that projects in the pipeline would not be absorbed until approximately 1990 results from the matching of the amount of space in the pipeline with the demand for space to accommodate employment growth. The analysis could have resulted in absorption by some other year, either later or earlier than 1990 (the year chosen for analysis in this study). For example, if forecast employment growth were greater or the space in the pipeline was less, those projects would be forecast to be absorbed in the late 1980's.

NOTES - Land Use and Real Estate Development (continued)

Since the employment forecasts for 1990 did not indicate demand for more development than was already in the pipeline, it was assumed that the market would influence future development such that some pipeline projects would be delayed, some not built at all, others added to replace those which are dropped, but few net additions to substantially add to the supply from the pipeline before 1990. Thus, the addition of space by 1990 would be in line with the demand (employment) forecasts. The projects under construction were treated differently than the projects in the pipeline. Those already under construction would be built by 1984 independent of demand considerations. However, all pipeline projects were not all assumed to be built on an already established schedule. Rather, it was assumed that market factors (demand) could exert some influence on the timing of development (particularly on the timing for projects in the early stages of formal review and for those in YBC).

- /6/ Section IV.B, Land Use and Real Estate Development Setting, explains that all of the space to be built by 1984 would not be absorbed by employment growth forecast to that time. Thus, some space in the 1984 land use setting would be available for occupancy in the 1984-1990 period. The analysis to determine when the pipeline projects would be absorbed assumes that the oversupply of space in 1984 would be absorbed and then the space in pipeline projects would be occupied. The process of matching employment growth and space incorporated consideration of a vacancy factor so that the amount of space needed to accommodate a given amount of employment growth exceeded the space to be occupied by the increased number of workers. (Vacancy assumptions are described in Appendix G.)
- /7/ The methodologies for estimating uses demolished and for projecting conversions to office use are described in Appendix G.
- /8/ Table G.22 at the end of Appendix G identifies the new construction, demolition, and conversions that account for the projected net changes in space 1984 to 1990.
- /9/ The distinction between space in office buildings (including office, retail, and other uses) and office space (space in office use) is discussed in Section IV.B., Land Use and Real Estate Development Setting. The methodology for forecasting the mix of uses in space in new office buildings is described in Appendix G.

Note that the increase in occupied office space 1984 to 1990 would exceed the increase in new space built for office uses, between 1984 and 1990, since some office space built by 1984 was assumed to become more fully occupied during the 1984-1990 period. This is discussed earlier in this section and in Section IV.B, Land Use and Real Estate Development Setting. See note 6.

NOTES- Land Use and Real Estate Development (continued)

- /10/ This estimate of additional hotel rooms does not include rooms in existing hotels that are improved to first-class status. The change in the supply of first-class hotel space due to renovation is reflected as an increase in hotel employment.
- /11/ When the forecasts of employment growth were compared with the supply of hotel space in pipeline projects, the large number of rooms to be added was judged to be slightly higher than would be absorbed by the hotel forecast for 1990. Thus, occupancies could decline for a short time until demand adjusts. However, the number of rooms that might be considered an oversupply was less than the number in a single major hotel facility. Thus, the pipeline projects were all projected for construction by the end of 1990. Because of this finding and the uncertainty of the duration of the current recession, it is possible that 500 - 1,000 of the new rooms forecast for 1990 could occur just after that time.
- /12/ There is more discussion of demolition and conversion of space later in this section. Section V.C, Business and Employment Impacts, considers these changes from the perspective of the types of businesses and jobs which would be affected.
- /13/ Compared to existing City policies and processes (early 1980's), Alternative 1 would allow more development than is currently permitted by right and would not include discretionary review. Alternative 1 assumes that developers would do the minimum required unless further embellishments made economic sense. Alternative 1 does not assume current policies and review processes. It assumes a literal translation of the Planning Code.
- /14/ "Down-zoning" refers to changing the current C-3 zoning to a zoning designation that places greater constraints on office development, such as from C-3 to R-C (which allows primarily residential and neighborhood serving commercial uses) or by changing from C-3-0 to C-3-R (thereby limiting the size of new office development).
- /15/ The main aspects of the Alternatives which were not incorporated into the real estate analysis through the design of prototypical buildings are the policies regarding the use of transferable development rights (TDRs) and the requirements and incentives for housing development. These policies were incorporated into the real estate analysis and the forecasts after separate, specialized analyses were done in each case. The building prototypes could not initially incorporate these policies until economic analyses were completed to indicate how the TDR policies and housing incentives and requirements would work in the context of each Alternative to affect new development. The building prototypes as discussed in this part of the text include the effects of all other policies of the Alternatives, including those affecting height, bulk, zoning, light and air, design, etc. Separate discussions beginning on page V.B.51 address the conclusions of the analyses of the policies for historic preservation and housing.

NOTES - Land Use and Real Estate Development (continued)

- /16/ The floor area ratio (FAR) is the ratio of the floor area of a building to the land area on which it is built. When calculated for the prototypes, the FAR reflects the amount of building space allowed on a site given the policies of the Alternatives as they would be expressed in the City Planning Code. The prototype FARs therefore measure only the "code gross square feet" of space in a building. A prototype FAR of 12 means that the code gross floor area of a new building would be 12 times the area of the site. For the same site, an FAR of 12 indicates twice as much building space as an FAR of 6.
- /17/ Two examples of "other potential constraints on building size" are (1) keeping the structure within height limits and (2) not blocking sunlight. The latter is not common to all Alternatives.
- /18/ Transfer of development rights is designed to shift development pressure from an area or building that is considered worthy of preservation. The difference between the existing FAR on a preservation site and the allowable FAR (if the site were not designated for preservation) is a right to development that can be transferred to another site where new development is considered more appropriate. The amount of building space represented by the unused FAR is the amount of space that can be added to a new development project, depending on height, bulk, FAR and maximum transfer policies applicable to the new development site.
- Although the FARs for the prototype buildings do not reflect the potential for the use of TDRs, the real estate analysis and the development forecasts include the effects of TDR policies. As described later in this section and in Appendix G, a separate economic analysis of TDRs was incorporated into the development forecasts. Although the economic analysis results in estimates of the additional amount of space that might be supplied because of the use of TDRs, FAR calculations similar to those done for the prototype buildings can only be prepared on a site-by-site basis.
- /19/ The average FARs shown in the table were calculated as follows. For each of the four zoning districts within the C-3 District, (C-3-0, C-3-R, C-3-S and C-3-G), an average prototype FAR was calculated based on the prototype FAR occurring most frequently on each block in that zoning district. Because of their size, large blocks south of Market Street were partitioned into three sub-blocks for this purpose. The C-3 average shown in Table V.B.3 is the average of the prototype FARs for the four zoning districts weighted by the approximate share of C-3 office development that would occur in each zoning district under each Alternative.

It is important to understand that the FARs discussed here are not the basic, maximum, or average FAR's specified by an Alternative. Rather, they are the FARs of several prototype buildings "designed" for each Alternative to meet the policies affecting the size and

NOTES - Land Use and Real Estate Development (continued)

shape of a new building, except for the policies regarding TDRs. Note that TDRs are likely to add more FAR in Alternative 5 than in the other Alternatives.

The FARs shown in Table V.B.3 are presented to summarize and highlight the relative differences among Alternatives in average FARs before including TDRs. These averages were not used in the forecasting process; rather the analysis was done using the detailed prototypes and combined with analysis of TDR policies.

- /20/ The supply of space depends more on FAR limits in areas of high market demand than on the overall average FAR. The text notes when relatively low or high FARs in a subarea play a critical role in affecting the amount of office space constructed.
- /21/ Larger (taller) buildings generally have higher construction costs per square foot. To eliminate the effect of this factor and to isolate the effect of only design factors, the construction cost comparisons among Alternatives are for buildings of similar size. The effect of size/height is eliminated since it is the purpose of this discussion to consider the costs of design requirements, not the total costs of construction under each Alternative. Design requirements include facade treatment (materials, colors, compatibility with surrounding buildings) and building setbacks (such as sculptured tops and setbacks on upper floors).
- /22/ The real estate model used to test the feasibility of new development is explained in Appendix G. The building space parameters and construction costs for the building prototypes were those developed through the construction feasibility analysis described in Appendix D. Appendix D provides examples of the information developed for each prototype building for each Alternative (see sample prototype building summaries in Appendix D). The real estate feasibility analysis was run on a lot-by-lot basis for each prototype building allowable under each Alternative.
- /23/ The incentive to produce housing is a consideration separate from the housing requirement discussed previously. The incentive refers to additional office space allowed in return for the production of a specified amount of housing. The requirement and the incentive may work in tandem, as in Alternative 4. (See discussion beginning on p. V.B.57.)
- /24/ Appendix G provides a detailed description of the real estate feasibility analysis of incentives to preserve architectural resources (investment tax credits and the TDR programs of the Alternatives) and to produce housing (how office bonuses for housing provision could lower housing development costs). These incentives were analyzed separately from the building prototypes. Since they are not requirements of the Alternatives, real estate feasibility analysis was required to determine if the incentives were likely to be

NOTES - Land Use and Real Estate Development (continued)

effective in achieving their purposes. The economics of real estate development under the various Alternatives would affect the extent to which it made sense for developers to use these incentives. The results of the analysis of incentives was combined with the results of the real estate feasibility testing of the building prototypes in developing the forecasts of future development for each Alternative. Thus, he forecasts incorporate the affects of all of the policies (requirements and incentives) of the Alternatives.

/25/ In both the text and supplemental tables, the numbers are thousands of gross sq. ft., of space. This is not to imply that the forecasts are unusually accurate. The numbers have not been rounded further to preserve the ability to add all figures and ensure consistency from one table to another. There are large differences in the magnitudes of the numbers, among uses and subareas. For example, office space by subarea can be counted in the tens of millions, while industrial/warehouse/automotive space by subarea can only be counted by the tens of thousands. (See Table G.15 in the supplemental tables for illustration.) In order not to lose the latter type of information, the tables are rounded to thousands.

/26/ Housing forecasts based on analysis of both the housing requirements of the Alternatives and the effectiveness of housing production incentives offered by some Alternatives are discussed beginning on page V.B.57.

/27/ While the land use/real estate projections are consistent with the employment forecasts, the Alternatives do not necessarily have similar effects on space and employment. The reader is encouraged to review both sections together. For several land uses, the differences in employment among Alternatives would be less than the differences in space. Comparing Table V.B.6 (Changes in C-3 District Commercial Space By Use and Alternative) and Table V.C.3 (Changes in C-3 District Employment by Business Activity and Alternative) highlights the differences between the two areas of impact.

The "match" between space and employment occurs via employment densities and space vacancies. For each of the Alternatives, the impact on these factors was assumed to be different. Employment densities are discussed in Section V.C, Business and Employment Impacts, and in Appendix H. The process of considering space vacancy when allocating employment to space is described in Appendices G and H.

/28/ Comparing Tables V.B.6 and V.C.3 demonstrates that the differences in the growth of office employment among the Alternatives are less than the differences in the growth of office space, as the increased rents for the Alternatives with less supply of new space would result in more intensive use of space and in a different mix of business activities.

NOTES - Land Use and Real Estate Development (continued)

- /29/ These components of the 1990-2000 change for office use are shown in detail, by subarea, in the Appendix G supplemental tables: G.25, G.27, G.29, G.31, G.33.
- /30/ Table V.C.4 in the Business and Employment Impacts section includes comments regarding how those demanding office space (business activity groups) react to the potential supply of space under each Alternative as described in Table V.B.8. Appendix H describes the process used to "match" the demand for and the supply of space.
- /31/ All references to costs, prices, and rents in this section are expressed in constant dollar terms unless noted otherwise.
- /32/ Discretionary review (not specifically identified by an Alternative) is not assumed to have an effect on preserving architectural resources under any of the Alternatives. Since the TDR provisions of Alternative 1 would seldom be used, many sites with architecturally significant resources would be developed. (See discussion of the conclusions regarding the TDR programs of the Alternatives beginning on page V.B.51).
- /33/ The amount of new construction in Subarea 4 is projected to be less than in past years. The lower growth is due to the lower projected growth in the activities (banking information processing and government) that occupied the space developed in the past and to the fact that some of the larger sites in better locations have already been developed.
- /34/ Under all Alternatives, much of the space converted to office use would have been industrial/warehouse space, auto repair shops and garages, and miscellaneous other space that would have been largely vacant for a period of time. The forecasts of space in these use categories account for conversions as described later in this section. Appendix G describes the methodology for estimating conversions. The supplemental tables at the end of Appendix G identify the amounts of space estimated to be converted from these uses to office use.
- /35/ Since the Downtown EIR Land Use Inventory already counts most of the older, upper floor space in these subareas as office space, upgrading would not add to the square footage of total office space. It would add to the supply of improved office space at higher rents, however.
- /36/ The incentives for housing and for retaining architectural resources are discussed under office space primarily from the perspective of whether they would affect the amount of office space built under each Alternative. For example, if a bonus of additional office space were offered if housing is built, the comments in this section would report on whether such an incentive had an effect on the office

NOTES - Land Use and Real Estate Development (continued)

space forecasts for each Alternative. Beginning on page V.B.51, the TDR policies of the Alternatives are analyzed in more detail in terms of their effectiveness as an incentive to preserve historic structures. (Section V.H.1 specifically addresses these impacts.) Beginning on page V.B.57, the housing policies of the Alternatives are discussed with regard to their impacts on housing production in the C-3 District.

- /37/ The line of reasoning that follows applies to Alternatives 4 and 5, as well as to Alternative 3. The constraints on building size in the other Alternatives are not exactly the same, however. The feasibility rationale for limited new development applies in all cases in which developers must look to sites which are already occupied by increasingly larger amounts of existing development, and thereby face less profitable new projects.
- /38/ It should be noted that new development of a vacant site is always feasible as long as the rents justify the cost of development. Land cost is irrelevant in this context as it is a "sunk cost".
- /39/ The Alternative 4 proposals call for both (1) "movement of the southern boundary of the C-3-0 district north to Mission Street" and (2) "elimination of the C-3-S district, with the revised zoning for the affected area to be that proposed for Areas 1, 3, and 8" of the SPUR plan for the South of Market (June, 1981). (See Appendix B, page B.4.4 and B.4.6-B.4.9.) The first point is intended to reduce the size of the high intensity downtown core, while the second point favors extending existing intensive office zoning south towards Folsom. These conditions are inconsistent.
- /40/ San Franciscans for Reasonable Growth has indicated that SPUR's "South of Market: A Plan for San Francisco Last Frontier", June 1981, be the controlling policies in the South of Market area west of the Yerba Buena Redevelopment Area.
- /41/ San Franciscans for Reasonable Growth, "Notice of Intent to Circulate Petition: Annual Limit on San Francisco Office Development". See Appendix B, page B.4.3.
- /42/ The Alternative 5 housing requirement does not specifically require that the units be affordable by workers in the office building as does the requirement in Alternative 4. See the analysis of housing later in this section for more information on the housing requirements.
- /43/ The proposed conditional use review process in downtown conservation districts may not differ substantially from the present use of discretionary review to evaluate historic preservation aspects of proposed projects. However, since none of the Alternatives reflects the current situation nor assumes the use of discretionary review, Alternative 5 is the only Alternative which assumes this type of review process. From a developers perspective, the designation of

NOTES - Land Use and Real Estate Development (continued)

a conservation district and the development of criteria for evaluating proposals could provide more certainty and would be preferable to a more discretionary process without defined criteria.

- /44/ The discussion of TDRs beginning on page V.B.51, examines the effectiveness of this policy.
- /45/ The Kearny Street corridor represents about four percent of the land area in Subarea 1. The corridor has been defined for analytical purposes by Alternative 5 policies. It includes that portion of Subarea 1 that would be rezoned C-3-R from C-3-0, as well as the northern continuation of Kearny Street, along which the height limits would be reduced.
- /46/ As stated in note 43, none of the Alternatives assumes the use of discretionary review for development along Kearny Street. The comparison between development along Kearny Street under Alternatives 1 and 5 describes the effect of changing the Planning Code as currently written (Alternative 1, not as currently applied) to policies designed to preserve the scale and character of the street (Alternative 5). The comparison between Alternatives 1 and 5 could also describe the effect of present policies, should the use of discretionary review result in the same outcome as the policies assumed for Alternative 5 in this study.
- /47/ Through the use of the TDR provisions of Alternative 5, some of the office development that would have occurred in Subarea 1 would instead occur in other subareas, particularly Subarea 2 over the longer term, as described in the next two paragraphs of text.
- /48/ As described in this paragraph of the text, the office development forecasts for Subarea 2 assume that it will take time for Subarea 2 rents to increase, for financial institutions to recognize that higher rents can be obtained for Subarea 2 office space, and for property owners of historic buildings to evaluate the effect and permanence of the conservation district policies in deciding whether to give up the rights to develop their property by selling TDRs. The ten years from 1990 to 2000 were assumed to be a transition period. Although Alternative 5 policies could ultimately allow more space to be developed in Subarea 2 (through the use of TDRs) than would Alternative 1, the amount of Subarea 2 development forecast for the 1990-2000 period is lower under Alternative 5 than Alternative 1 because it was concluded that market demand would not yet be strong enough at the higher rent levels to support more new construction. If this judgment is in error and the market adjusts more quickly and places a higher value on Subarea 2 locations, the Alternative 5 forecasts shown here would be low. As explained later in this section (see page V.B.49), relatively more development would occur in Subarea 2 over the long term under Alternative 5 as compared to Alternative 1.

NOTES - Land Use and Real Estate Development (continued)

- /49/ The predominantly residential areas of the Tenderloin and South of Market Street would be rezoned to R-C in Alternative 5. This zoning designation accommodates residential and residential-serving commercial uses. Although large office buildings could be allowed through conditional use review, it is not assumed that a large amount of office development would be allowed. Otherwise there would be no major reason to change to R-C zoning.
- /50/ Appendix H provides background on these forecasts and on comparisons between retail space, employment and sales.
- /51/ The share of retail space in office buildings would not increase significantly in those Alternatives with less office development. Retail uses generally prefer lower floor locations and would consequently not expand to other parts of the office building. New retail space in office buildings was estimated as a proportion of the total amount of new office development. The assumptions for the amount of retail space in office buildings varied by subarea. The addition of retail space in new office development is not directly proportional to the additional retail demand from office employment growth. In fact, the analysis indicated that more retail space is generally included in office buildings than would be supported by the employment growth accommodated in that building.
- /52/ As was the case in the 1984-1990 period, this estimate of additional hotel rooms does not include rooms in old hotels improved to first-class status. The increase in hotel employment accounts for this upgrading, as discussed in Section V.C, Business and Employment Impacts.
- /53/ No new construction in these uses is forecast to occur during the 1990-2000 period. However some growth in employment is forecast. Therefore, some existing space in the C-3 District, most likely older office space, would be occupied by activities in this category, such as non-profit and educational organizations. This would be treated for analysis, as a change in use (from office to cultural/institutional/educational): a decrease in space counted in the office category and an increase of space counted in the cultural/institutional/educational category.

In the real estate analysis, "other" space is vulnerable to demolition. It is also a prime candidate for conversion, in which case it may well become occupied by employment in cultural, institutional, or educational activities.

See Tables G.24-G.33 in the supplement to Appendix G for the specific forecasts of conversions, demolition and other changes in use.

- /54/ San Franciscans for Reasonable Growth, "Notice of Intent to Circulate Petition. Annual Limit on San Francisco Office Development". See Appendix B, p. B.4.3.

NOTES - Land Use and Real Estate Development (continued)

- /55/ The methodology for estimating demolition of existing space is described in Appendix G, Land Use and Real Estate Development Analysis. The supplemental tables at the end of the Appendix show demolition by use for each Alternative.
- /56/ The map of the proposed conservation districts is included on page B.5.31.
- /57/ San Francisco Department of City Planning, Guiding Downtown Development, July 1982, Appendix F, pp. F. 16-18. The draft text of the implementing ordinance does not indicate what would constitute "reasonable use" or whether the cost of the property is to be considered. "Substantial alteration" is not objectively defined either.
- /58/ All of the Alternatives use the concept of unused FAR in association with TDRs. The "unused FAR" is defined as the difference between the (basic) FAR allowed on the site and the FAR of the existing historic building on the site. The transferable development rights are thus an amount of gross sq. ft. of building space as measured by the Planning Code.

The amount of building space represented by the unused FAR (or a multiple of the amount, in some Alternatives) may be added to a new development project on another site, until any maximum FAR, height, bulk or maximum transfer limits are reached.
- /59/ A non-certified building over 30 years old qualifies for a 15 percent investment tax credit and one over 40 years old for a 20 percent credit.
- /60/ The report prepared for the Foundation for San Francisco's Architectural Heritage by John M. Sanger Associates, "San Francisco Downtown Conservation Study", was reviewed as background to the analysis of the TDR programs of the Alternatives.
- /61/ Appendix G includes value gain calculations for the use of TDRs from buildings of various sizes.
- /62/ Appendix G includes illustrative value gain calculations for the use of TDRs (1) in the same subareas as the designated building and (2) in the subarea with the highest rent.
- /63/ TDRs granted equal to the unused FAR do not change the potential income-producing space allowed the property owner on that site. The primary advantage to the owner of the historic building is that the space in the historic building remains a source of income without a cost of construction. This is usually not sufficient to offset the disadvantages, namely (1) the old space may rent for less than new space would, (2) with the historic building retained, the site usually cannot be used for new development, and (3) the use of the TDRs may be less valuable elsewhere (and thus the

NOTES - Land Use and Real Estate Development (continued)

market price per unit less than the historic building owner would want to accept) due to height and bulk limitations or competition from more attractive development bonuses.

- /64/ This section discusses the production of housing from the real estate market perspective. It considers how the housing incentives (office bonuses) and requirements of the Alternatives are likely to affect the amount of housing built and the prices of that housing. It also present the forecast of housing development in the C-3 District 1990-2000.

Housing is discussed in Section V.D from a different perspective. That section considers the future residence patterns of C-3 District workers and the potential effects of downtown employment growth on the housing market in San Francisco.

- /65/ Forecasts of the number of new units were converted to forecasts of residential space using assumptions about the average size of the units built. These assumptions varied by subarea, reflecting costs, the characteristics of existing housing in the area, the potential for mixed office-residential projects and other locational factors that would influence unit type. It should be noted that the housing prototypes shown in Appendix D were not directly used in the housing space forecasts.

- /66/ This number appears low in comparison with the number of housing units in the pipeline, even excluding those in Yerba Buena Center. It should be remembered that the present situation does not represent the conditions of Alternative 1. The majority of housing included in the pipeline (excluding YBC) is being developed as part of office building projects. One reason for the inclusion of housing in these projects is the anticipation by developers that office projects which do not include housing or provide funds for housing programs would not be approved by the City.

- /67/ The real estate feasibility model was used to analyze the impact of the housing policies of the Alternatives. Calculations for each Alternative determined the potential cost of producing housing units utilizing the office space bonuses provided to reduce these costs. The resultant housing costs represent the price at which the units could be sold to cover costs and provide a return to the developer. However, the market price for these units is likely to be higher than this "cost" amount. The market price would be set by other similar types of units on the market that were not produced using an office space bonus as a subsidy. The developer of the subsidized units would probably sell his units just below the market price. They would be more likely to sell quickly at this "reduced" price. They are unlikely to be sold as low as the subsidized cost

NOTES - Land Use and Real Estate Development (continued)

amount since part of the "incentive" to produce housing is the additional return that can be earned because of the subsidy. Thus, both the consumer and developer would benefit from units sold at prices which are below market prices for comparable units, but which are above prices which would just cover production costs.

- /68/ An analysis of the Alternative 4 housing requirement prepared by San Franciscans for Reasonable Growth assumed for illustrative purposes that \$20,000 was the average down-payment for the purchase of a housing unit in San Francisco and would thus be the amount of an in-lieu contribution to the City's housing program.
- /69/ A share of the market housing demand met by market priced units produced under any Alternative would have been met by units constructed elsewhere if they had not been built in the C-3 District. The portion of units that are a net addition to the City for each Alternative is considered in Section V.D (see particularly Table V.D.3).
- /70/ As identified in Appendix G (Table G.11), the housing policies of Alternative 4 would require 7,620 units as a result of forecast office development during the 1990 to 2000 period. The following is a potential scenario for meeting this requirement: about 20 percent (1,520) would be met by contributions to a City housing fund (\$20,000 per unit); about 3,000 units would be built in the C-3 District, excluding those constructed by City housing fund programs; about 1,700 units would be constructed elsewhere in the City; and about 1,400 units would be rehabilitated and made available for low income households. The contributions to the City housing fund could support the construction of 1,000 units (about half in the C-3 District) and the rehabilitation of another 500 units. Other scenarios are possible.
- /71/ The July 1982 version of Guiding Downtown Development (GDD) which was used to define Alternative 5 does not specifically identify the current Office Housing Production Program (OHPP). However, an in-lieu contribution of \$6,000 was assumed to be an option for meeting the Alternative 5 housing requirement. The option of an in-lieu contribution would not affect the office space forecast. It would affect the housing forecast, however. More units would be built than are now forecast but the average price for units built in the C-3 District would be higher than shown in Table V.B.9. The contributions to a City housing fund would enable low and moderate income units to be built.
- /72/ As identified in Appendix G (Table G.11), the housing policies of Alternative 5 would require 6,040 units as a result of forecast office development during the 1990 to 2000 period. One scenario

NOTES - Land Use and Real Estate Development (continued)

would estimate that credits for about 4,000 units would be given for contributions to the City's housing fund. About 500 units would be privately developed in the C-3 District and another 1,140 built privately elsewhere in the City. Rehabilitation of existing units would account for about 400 housing credits. The contributions to the City housing fund would produce about 1,000 new units (about half in the C-3 District) and about 500 rehabilitated units. Other scenarios are possible.

- /73/ For Alternatives 2 and 4, low-income housing located outside of the C-3 District provides a one-for-one bonus, but low-income housing within the C-3 District provides a double bonus.

C. BUSINESS AND EMPLOYMENT

APPROACH

The analysis of future potentials for economic expansion in the C-3 District was approached from the perspectives of the different business activities described in section IV.C. This economic analysis included review of recent employment trends and historic patterns, identification of the key factors in the location decisions of firms of various types, consideration of geographic areas competitive with downtown San Francisco, and review of existing forecasts relevant to each activity. A major component of this analysis was the Downtown EIR Employer Survey which included interviews with decision-makers at 58 establishments in the C-3 District, including representatives of the major downtown employers.

The economic analysis produced a forecast of C-3 District employment by business activity for 1984, 1990, and 2000. This forecast (hereinafter referred to as the "baseline forecast") represented the demand for space under certain real estate market conditions, namely conditions typical of the past couple of decades. Space in new buildings is assumed to be available, some in the most preferred locations, some in locations becoming more competitive with the most preferred locations, and some in moderate rent buildings in less desirable parts of the C-3 District. Rents (in constant dollars) are assumed to remain at about their current level./1/

These market conditions are likely to be maintained by the space to be built in the pipeline. After the buildings in the pipeline have been absorbed, the real estate market conditions could change to reflect the Alternative implemented by the City. As described in the Land Use and Real Estate Development section (V.B), the market conditions of the baseline forecast are essentially those of Alternative 1./2/ The adoption of Alternative 1 would therefore imply growth per the baseline forecast.

Adoption of one of the other Alternatives would not maintain the supply of space at present rents to the year 2000. The scenarios of future employment and space for Alternatives 2 through 5 were developed by "matching" the demand for space (baseline employment forecast) and the potential supply and rents for space under each Alternative as determined from the real estate analyses./3/

Before summarizing the business and employment impacts of the Alternatives, the next subsection highlights the economic and employment trends embodied in the baseline forecast. Appendix H describes the forecasting methodology and the basis for the forecasts in more detail.

ECONOMIC POTENTIALS FOR THE C-3 DISTRICT

In the next 20 years, the greatest opportunities for economic expansion in the C-3 District will be in the office, tourism, and retail/entertainment sectors. Overall potentials are highlighted by the following:

- Continued increase in headquarters operations will support growth potentials for the office sector. The executive and managerial functions of manufacturing, mining, finance, and similar companies will continue to place a high value on a location at the heart of San Francisco's C-3 District. Headquarters of companies doing business in the Pacific Basin and of electronics and high technology companies will become increasingly more important.
- Expanded business services (lawyers, accountants, advertising, consultants, etc.) will support strong office growth potentials. This is a diverse group of firms, in terms of both size and function. Many value accessibility to other downtown businesses, and the image and ease of communication offered by a central location. Others, particularly smaller firms, are more sensitive to the costs of a downtown location.
- Due to the recent growth in information processing functions, requiring large amounts of space and access to special labor markets, some large firms are evaluating new locations for such office functions. The relatively high costs of a central location are also a factor for firms with

expired leases and others evaluating how much of a premium they are willing to pay. Improved communications technology makes locations at the outer portions of the C-3 District, at more outlying City locations, or outside of San Francisco possible.

Such reallocations will be more likely to occur in the administrative or "back office" functions of the larger companies in the finance, insurance, and manufacturing groups, the utilities, and the larger business service firms as well as smaller service, transportation, and communications firms. The employment forecast incorporates consideration of move-outs or shifts of these types. Except for utilities, industry growth exceeds the expected move-outs in all cases so that there is still net growth forecast for these functions in the C-3 District.

- Increasing business among Pacific Basin countries will support growth of office activity in San Francisco because of its central location, desirability, and role as one of the major business centers in the West Coast. The positive influence of this factor is incorporated into the forecasts for office activities of manufacturing, wholesale, transportation, communications, and business service activities.
- The wholesale activities of manufacturers' representatives and the merchandise/apparel marts are expected to remain strong in the C-3 District, particularly those associated with downtown retailing.
- The public sector is unlikely to grow significantly, at least in the 1980's, as local, state, and federal governments cut back and shift priorities. Government office activities located in leased space in the C-3 District are forecast to decline as leases expire and agencies seek lower cost space outside of the study area.
- Growth of tourism is forecast after recovery from the slower period of the early 1980's. Convention visitors are expected to increase in importance. Increased tourism supports the growth of overnight accommodations and restaurant and retail establishments.
- Retail trade (stores and restaurants) is forecast to grow in the C-3 District and sales are expected to increase at a greater rate than employment./4/ Downtown retail growth will be supported by increased tourist spending, increased spending by downtown workers, as downtown employment increases, and growth in spending downtown by residents of the City and region.

- Lower overall growth is expected for downtown retail services, compared to other sectors. Growth trends are strongest for those activities in the fashion industry and for those depending on high pedestrian traffic and tourist trade. Others that are more sensitive to cost, i.e. medical/dental and delivery/messenger services, will feel pressure to consolidate downtown activities or to disperse to more peripheral locations.
- Only limited overall growth is expected for the group of cultural, entertainment, educational, non-profit, and institutional uses in the C-3 District. Entertainment and educational activities are expected to grow, but other activities in this group will consolidate or relocate outside the C-3 District in areas with lower space costs.
- Factors responsible for the decline in manufacturing and distribution activities in industrial space in San Francisco are unlikely to change. Certain of these activities will continue to desire a San Francisco location, including those which value proximity to the office sector or to the City's labor force. Others will seek sites outside the C-3 District that are more suitable to their needs. The small share of these activities which still remain in the C-3 District will find it increasingly costly and difficult to remain there and will shift to more peripheral locations.

Table V.C.1 summarizes the C-3 District economic forecasts described above. Overall, the economic analysis and baseline forecast indicate the underlying strength of the C-3 District as a preferred location for headquarters, business services, retail and hotel activities. Comparison with growth for the past decade (see Table IV.C.6) indicates that generally lower rates of growth are forecast over the next 20 years.

In the course of the economic analysis, consideration was given to the effect on C-3 activity of possible future development further south of Market Street outside the C-3 District, including Mission Bay. A master plan for Mission Bay is under preparation. There is uncertainty as to public policies for development in these southerly areas, as to the acceptability of options being considered for Mission Bay, and the extent and timing of development of the infrastructure, particularly transportation, that would be needed to facilitate significant southward expansion.

TABLE V.C.1: BASELINE FORECAST OF C-3 DISTRICT EMPLOYMENT GROWTH POTENTIALS (a)

<u>Business Activity</u>	<u>Forecast 2000 Employment</u>	<u>Employment Growth 1981-2000</u>	<u>Growth Rate 1981-2000 (b)</u>
<u>Primary Office</u>	261,540	88,990	2.2%
Manufacturing and Mining	29,000	10,780	
Finance, Insurance Real Estate	98,630	30,050 (c)	
Business and Professional Services	84,750	44,100	
Transportation, Communi- cations, Utilities	35,890	7,150 (d)	
Government Office	13,270	-3,090	
<u>Secondary Office</u>	54,320	19,550	2.4%
Wholesale and Manufac- turing Sales	24,050	10,810	
Retail Services	22,650	6,350	
Branch Banks	7,620	2,390	
<u>Retail Trade</u>	29,040	6,850	1.4% (e)
<u>Hotels</u>	20,570	7,270	2.3%
<u>Cultural/Institu- tional/Educational</u>	10,140	2,010	1.2%
<u>Industrial/Warehouse/ Automotive/Parking</u>	3,740	-3,190	-3.2%
TOTAL (f)	379,360	121,490	2.05%

TABLE V.C.1: BASELINE FORECAST OF C-3 DISTRICT EMPLOYMENT GROWTH POTENTIALS (a) (Continued)

- (a) See Appendix H for a description of methodology, for background on the reasoning behind the forecasts, and for discussion of how these forecasts compare to other forecasts.
- (b) Annual compound growth rate.
- (c) FIRE forecast includes growth of 16,290 jobs in executive/managerial functions and 13,770 jobs in information processing/administrative functions. The lower growth in the latter category reflects the assumption that some in this group move out of the C-3 District over time and that, in the future, more of the growth of these functions will occur in non-central locations.
- (d) TCU forecast includes a small decline of employment in utilities and growth of jobs in non-utility transportation and communication firms.
- (e) Retail sales are forecast to increase at 2.36% per year, higher growth than retail employment.
- (f) Baseline forecast does not include construction or building maintenance jobs. These were estimated based on the amount of construction activity and the space added in each Alternative.

SOURCE: Recht Hausrath & Associates

It was reasoned that the business activities forecast to grow in the C-3 District prefer this central area over a more peripheral City location. This is particularly true of those that value a location in Subareas 1, 6, 7, and 2 (see Figure II.C.1) nearer Market Street. Thus, while there would be shifts of some activities between the C-3 District and southern areas, development to the south is expected to have a greater effect on total City employment than on employment in the C-3 District. In other words, it is not expected to result in shifting activities out of the C-3 District as much as it is to retain or attract some of the activities to the City which otherwise would have located outside the City. As explained later in this section, the choice of Alternative policies for the C-3 District, however, has an effect on facilitating or discouraging southern expansion and thus, on the degree to which there might be shifts in activity away from the C-3 District.

The economic forecasts considered other important factors affecting C-3 business activity and employment, including labor supply and housing. Economic growth requires expansion of the region's housing supply. In the 1970's, the passing of the baby boom generation into the labor force and the increase in the number of working women provided the majority of new workers. In the 1980's and 90's, job growth will require more in-migration to supply the required labor. New worker households require housing growth.

The employment forecasts assume that a large potential for housing expansion exists at the periphery of the region where there is more time, cost, and difficulty involved in traveling to and from jobs in San Francisco. This factor provides an incentive for business to locate at more outlying locations and is one of the reasons behind the forecast expansion of some functions in suburban locations.

The employment forecasts also recognize the increasing acceptance of higher density, central city living and assume that infill residential development at locations closer to City jobs will offset some of the above effect. The preference for higher density living by the types of workers employed in downtown San Francisco (higher proportions of younger people, single individuals, households without children, minority group members) is also important. The housing sections of this report consider the housing patterns of downtown workers in detail.

Consideration was also given to the ability of transportation systems to handle increased numbers of commuters. The economic forecasts considered the time/cost factors of travel as described above. They did not assume, however, that the physical capacities of the transportation systems would constrain C-3 District employment growth. An overview evaluation indicated that such physical constraints were unlikely. The transportation and housing sections of this report consider transportation impacts of future employment growth and the types of adaptations in residence and travel patterns which are likely to occur.

1990 C-3 DISTRICT EMPLOYMENT

Employment in the C-3 District in 1990 is forecast to be 322,500 jobs (see Table V.C.2). From 1984 to 1990 employment growth would be 41,700 jobs. This represents an annual compound growth rate of 2.33 percent. A decline is forecast for C-3 employment in industrial/warehouse/automotive/parking activities. There would be employment growth, however, in all other business activity groups. The largest amount of job growth would be in the office sector, while the highest percentage increase would be in hotel employment.

The 1990 employment under the baseline forecast (see Table V.C.1 and related text) was compared with the potential supply of space if all pipeline projects were built (see Section V.B and particularly Table V.B.1). This comparison indicated that the demand for space to accommodate the baseline employment forecast by 1990 was approximately equal to the space that would be available as a result of construction of the buildings in the pipeline./5/ Consequently, the Alternatives would not affect C-3 District economic activities and employment during the 1980's. Thus, there is only one forecast of employment growth to 1990 which would apply under all Alternatives.

In addition to C-3 District permanent employment, construction employment is estimated to average 5,365 jobs per year over the 1984 to 1990 period (see Table V.C.6)./6/

2000 C-3 DISTRICT EMPLOYMENT

After 1990, the policies embodied in the five Alternatives would have an effect on economic activities and employment in the C-3 District. Employment growth in the C-3 District would be as large as the baseline forecast in only one Alternative, Alternative 1. Alternative 2 would result in a little less employment growth than Alternative 1, followed by Alternative 3 with employment growth which falls in the middle of the five Alternatives. The policies under Alternative 4 would have the most

effect on C-3 District employment. Alternative 5 would be similar to Alternative 4, with slightly more employment growth.

Under all Alternatives the annual percentage rate of employment growth would be lower from 1990 to 2000 than for the 1984 to 1990 period. Annual compound growth rates would range from 1.32 percent (Alternative 4) to 1.85 percent (Alternative 1) during the 1990's (see Table V.C.2). These rates compare to 2.33 percent for the prior 1984 to 1990 period.

Employment growth would occur in all subareas of the C-3 District, under all Alternatives. The distribution of employment growth among subareas would be similar to the distribution of newly built and converted space as described previously in Section V.B., Land Use and Real Estate Development. Tables summarizing employment by subarea are presented in Appendix H.

In addition to permanent employment, construction employment would be affected by the Alternatives. Over the 1990 to 2000 period, construction employment would range from an average of 5,350 jobs per year (Alternative 1) to 4,200 jobs per year (Alternative 5). (See Table V.C.6.) These estimates include employment in new construction, conversions, ongoing maintenance and upgrading work, and in project management. The differences among Alternatives reflect the different amounts of development that would occur under each.

The following discussions of each Alternative describe the forecast changes in permanent employment in the C-3 District from 1990 to 2000 and highlight the differences among Alternatives by comparing each to the baseline forecast. Since employment growth occurs under all Alternatives, the discussions focus on the extent to which growth would be less than the baseline forecast, and on the business activities and types of firms most affected.

Lower employment growth than the baseline forecast indicates that some business activities which would have newly located, expanded, or

remained in the C-3 District under the baseline forecast (and Alternative 1) would not do so under another Alternative. This location decision could be made by smaller firms or by functions within larger organizations (e.g. a data center relocating at a location separate from its headquarters office). The behavior that results in the differences among Alternatives would occur gradually over time, as an outcome of the location evaluations made when leases expire, when new businesses are formed, and when expansion is needed. Lower employment growth in any business activity, compared to the baseline forecast, does not necessarily indicate that jobs currently in the C-3 District would leave that area.

Tables which summarize the employment forecasts for the Alternatives are presented on the next several pages and are referred to in the text which follows.

In reviewing these tables and the text, the reader should keep three points in mind. One is that, among Alternatives, there would be much less difference in total C-3 District employment in 2000 than in employment growth 1990 to 2000. The growth in one or even several decades would be small relative to the amount of employment already located in the C-3 District. Second, the Alternatives would have different effects on different business activities. Generally those most affected would be the ones most sensitive to the cost of space and those which place less value on a central C-3 District location. Third, compared to the forecasts of the development of space described in the previous section (V.B), the employment forecasts indicate that the Alternatives would have less effect on employment than on space. This is primarily because businesses would take steps to use existing space more efficiently under those Alternatives with higher rents (and less new development).

TABLE V.C.2: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY AND ALTERNATIVE, 1990 and 2000

Business Activity	1984	1990	2000 By Alternative				
			1	2	3	4	5
Primary Office	185,870	216,220	261,540	259,530	257,010	247,120	248,470
Secondary Office	37,350	43,180	54,320	53,600	52,930	50,820	51,590
Retail Trade (a)	23,200	25,370	29,040	28,960	28,460	28,000	28,030
Hotel	13,820	16,320	20,570	20,570	20,570	20,210	20,210
Cultural/Institutional/ Educational	8,340	9,290	10,140	9,890	9,890	9,110	9,260
Industrial/Warehouse/ Automotive/Parking	6,500	5,640	3,740	3,740	3,300	5,270	4,120
Building Maintenance	5,780	6,510	7,880	7,780	7,600	7,110	7,140
TOTAL	280,860	322,530	387,230	384,070	379,760	367,640	368,820
Annual Compound Growth Rate							
1984-1990		2.33%					
1990-2000			1.85%	1.76%	1.65%	1.32%	1.35%

NOTE: The forecasts above reflect the synthesis of the baseline employment forecast and the supply of space under each Alternative. Appendix H describes the methodology. These figures do not include construction employment which is presented in Table V.C.6. The effects of the Alternatives are better seen by examining the differences in the growth of employment between 1990 and 2000 (see Table V.C.3). Because of the large base of employment before 1990, the overall downtown pattern, as shown by the totals above, changes only slowly over time.

- (a) Retail sales are forecast to increase at a greater rate than retail employment. Further, the Alternatives would have less effect on retail sales than on retail employment. See discussion of retail forecasts in Appendix H.

SOURCE: Recht Hausrath & Associates

TABLE V.C.3: CHANGES IN C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY AND ALTERNATIVE,
1990-2000

Business Activity	Employment Change 1990-2000 By Alternative					Percentage Change 1990-2000 By Alternative				
	1	2	3	4	5	1	2	3	4	5
Primary Office	45,320	43,310	40,790	30,900	32,250	21.0%	20.0%	18.9%	14.3%	14.9%
Secondary Office	11,140	10,420	9,750	7,640	8,410	25.8%	24.1%	22.6%	17.9%	19.5%
Retail Trade (a)	3,670	3,590	3,090	2,630	2,660	14.4%	14.2%	12.2%	10.4%	10.5%
Hotel	4,250	4,250	4,250	3,890	3,890	26.1%	26.1%	26.1%	23.8%	23.8%
Cultural/Institutional/ Educational	850	600	600	(180)	(30)	9.1%	6.5%	6.5%	-1.9%	-0.3%
Industrial/Warehouse/ Automotive/Parking	(1,900)	(1,900)	(2,340)	(370)	(1,520)	-33.7%	-33.7%	-41.5%	-6.6%	-26.9%
Building Maintenance	1,370	1,270	1,090	600	630	21.0%	19.5%	16.8%	9.2%	9.7%
TOTAL	64,700	61,540	57,230	45,110	46,290	20.1%	19.1%	17.7%	14.0%	14.4%

NOTE: Differences in the changes over the 1990-2000 period highlight the effects of the Alternatives on C-3 District employment.

(a) Among Alternatives, differences in retail sales are less than the differences in retail employment shown here. Retail sales and employment are discussed in Appendix H.

SOURCE: Recht Hausrath & Associates

TABLE V.C.4: CHANGES IN C-3 DISTRICT OFFICE EMPLOYMENT BY BUSINESS ACTIVITY AND ALTERNATIVE, 1990-2000

Office Activities	1990-2000 By Alternative					Comments Regarding Impacts Of Alternatives
	1	2	3	4	5	
Manufacturing and Mining Headquarters	6,300	6,200	5,900	5,500	5,400	High preference for central C-3 District location. They are the least affected by the differences among the Alternatives.
FIRE Executive and Management Functions	8,750	8,530	8,370	6,900	7,000	Fairly strong preference for a central location. Some relationship to location of information processing function.
FIRE Administrative and Information Processing	6,020	5,730	5,220	1,300	2,400	Very sensitive to space costs.
TCU Utilities	(50)	(120)	(350)	(1,200)	(1,100)	Sensitive to space costs.
TCU Non-Utilities	4,230	4,020	3,950	3,100	3,200	These three groups each have a mix of types of activities with varying preferences and rent paying abilities. Smaller firms and lower rent-payers would be affected first. Others show stronger preferences for a C-3 District location and would remain under the lower growth Alternatives.
Business and Professional Services	21,690	20,580	19,330	16,930	16,980	
Wholesale and Manufacturing Sales	6,160	5,790	5,430	4,630	4,850	
Retail Services	3,620	3,300	3,060	2,050	2,530	Fairly sensitive to space costs although many need to be accessible to customers and clients.

TABLE V.C.4: CHANGES IN C-3 DISTRICT OFFICE EMPLOYMENT BY BUSINESS ACTIVITY AND ALTERNATIVE, 1990-2000 (Continued)

Office Activities	1990-2000 By Alternative					Comments Regarding Impacts Of Alternatives
	1	2	3	4	5	
Government	(1,630)	(1,630)	(1,630)	(1,630)	(1,630)	Those in leased space are price sensitive and eventually leave the study area regardless of Alternative. Much of what remains is in government buildings.
Branch Banks	1,370	1,330	1,260	960	1,030	Differences among Alternatives reflect differing demands for banking as a function of office growth in the other categories.
Total Office (Primary and Secondary)	56,460	53,730	50,540	38,540	40,660	

SOURCE: Recht Hausrath & Associates

TABLE V.C.5: CHANGES OVER TIME IN C-3 DISTRICT EMPLOYMENT DENSITIES IN OCCUPIED OFFICE SPACE, BY ALTERNATIVE (Gross Square Feet Building Area Per Employee)

	2000 by Alternative				
	1	2	3	4	5
1981					
Primary Office	281	279	276	267	267
Change 1981-2000	2½ Less Dense	1½ Less Dense	No Change	3½ More Dense	3½ More Dense
Secondary Office	211	210	208	200	200
Change 1981-2000	1½ Less Dense	1½ Less Dense	No Change	4½ More Dense	4½ More Dense
Average Primary and Secondary Office	269	267	265	256	255

NOTE: Changes in employment densities over time reflect changes in the mix of office business activities in the C-3 District (under all Alternatives) and changes in the densities for individual activities (under Alternatives 2, 3, 4, and 5).

Employment densities are for occupied space and do not include allowances for vacant office space. For example, if a 3 percent vacancy factor were assumed for primary office space in 2000, the employment density of 281 gross square feet of occupied office space per employee under Alternative 1 would be 290 gross square feet of total (occupied and vacant) office space per employee.

SOURCE: Recht Hausrath & Associates

TABLE V.C.6: C-3 DISTRICT CONSTRUCTION EMPLOYMENT, 1984-2000

	1984-1990	1990-2000 by Alternatives				
		1	2	3	4	5
Total Person-Years of Construction Employment	32,190	53,530	52,620	48,960	42,500	41,980
Annual Average Construction Employment	5,370	5,350	5,260	4,900	4,250	4,200

NOTE: Estimates include construction labor for new buildings, conversions, and ongoing upgrading; and labor for project management. The methodology is described in Appendix H.

SOURCE: Recht Hausrath & Associates

Alternative 1

Total employment in the C-3 District is forecast to be 387,000 jobs by 2000, reflecting a net increase of 64,700 jobs over 1990 (see Tables V.C.2 and V.C.3). This would represent a 20 percent increase. As noted earlier, the policies under Alternative 1 would accommodate the business and employment growth anticipated for 2000 in the baseline forecast./7/

From 1990 to 2000, over 70 percent of C-3 District employment growth would be primary office activities and over 17 percent in the secondary office group. Hotels and retail trade would represent most of the remaining growth. Of the business activity groups, hotel employment would experience the highest percentage increase of 26 percent. A decline of about 1,900 jobs would occur in the industrial/warehouse/automotive/parking group in the C-3 District. Increasing competition for sites in the C-3 District would support shifts of these activities to locations outside the study area.

Employment densities for individual business activities would stay constant over the 1981 to 2000 period, but overall average densities for the primary and secondary office groups would change as the mix of business activities within each group changed. As shown in Table V.C.5, office activity would become less dense over time, although the changes are small, in the range of one to two percent. This pattern reflects the greater relative shares of office employment represented by those business activities which are less dense, primarily corporate headquarters and business services.

Alternative 2

Total C-3 District employment under Alternative 2 is forecast to be 384,000 jobs in 2000. This would represent growth of 61,500 jobs and an increase of 19 percent over 1990 (see Tables V.C.2 and V.C.3). Employment growth between 1990 and 2000 under this Alternative would be about 95 percent of the growth under the baseline forecast. Total

employment in 2000 would be very similar to the baseline forecast.

The employment differences between Alternative 2 and the baseline forecast would primarily arise from less growth of office activities (about 4.8 percent less). Retail trade would show slightly less employment growth because of reduced retail spending by fewer downtown workers. The growth of employment in the cultural/institutional/educational group would also be lower. Tourism and hotels would not be affected by this Alternative, nor would the group of industrial activities.

Although the differences between the baseline forecast and employment growth under Alternative 2 are fairly small, some observations can be made about the direction of the Alternative 2 policies' effect on the various business activities. These same observations apply to the differences between the baseline forecast and the employment under Alternatives 3, 4, and 5.

Those business activities most affected would be the ones most sensitive to the cost of space (rents) and those which place less value on a central location. While there would be some differences in employment in all office activity groups, retail services, wholesaling, and business and professional services would be most affected (see Table V.C.4). Generally, the more cost-conscious, smaller firms in these groups would be the first to choose an alternate location when rents are higher. It is also likely that utilities and the information processing functions of larger companies would locate more of their employees in facilities outside of the study area.

Comparison between the employment and the space forecasts for Alternative 2 indicates that the growth of employment (95 percent of the baseline forecast) would be affected less than space/new development (92 percent of non-residential space added under Alternative 1). If businesses were faced with higher rents in the downtown area, it is anticipated that efforts would be made to use space more efficiently. The Alternative 2 employment forecast assumes that employment

densities of C-3 District office activities would be one-half percent greater by 2000 than under Alternative 1./8/ This adaptation accommodates more employment in a given amount of space.

Although it is assumed that employment densities for office activities in Alternative 2 would increase because space rents would be higher, overall office densities would be slightly less in 2000 than in 1981 (see Table V.C.5). Changes in the mix of business activities (more activities with lower densities) offset changes in employment densities for individual groups (one-half percent increase in density).

Alternative 3

Total C-3 District employment under Alternative 3 would be 380,000 jobs in 2000 (see Table V.C.2 and V.C.3). There would be an increase of 57,200 jobs from 1990 to 2000 (18 percent increase). Employment growth would be more widely distributed throughout the study area than under any of the other Alternatives, and growth would be lower than under the baseline forecast (88.5 percent of baseline forecast). In total, 2000 employment under Alternative 3 would represent 98 percent of the baseline forecast.

The employment differences between Alternative 3 and the baseline forecast for the 1990 to 2000 period would arise from less growth of office activities (about 10 percent less), less growth of employment in the cultural/institutional/educational group, and less growth of retail trade because of lower downtown office employment growth. A larger decline in employment would occur in industrial/warehouse/automotive/-parking activities (about 21 percent greater decline). Although there would be declines in this type of employment in the C-3 District under all Alternatives, the decline would be largest under Alternative 3 primarily because of the greater amounts of new development and conversions in the more outlying subareas where most of these uses are located. Tourism and hotel employment would not be different from the baseline forecast in this Alternative.

Compared to the other Alternatives, the Alternative 3 policies would make it relatively more difficult and more costly to add space in the prime office locations in the C-3 District. Increased competition for sites in the desirable areas would raise rents. However, the policies would also allow the dispersion of development and conversions to office use in the more peripheral subareas. Large space users (administrative and information processing functions) and smaller price-sensitive firms (business and professional services and wholesaling) would find these locations to be acceptable. The resultant growth of office activities is as close as it is to the baseline forecast and to Alternatives 1 and 2 because the policies enable relatively large growth in these outlying subareas. This dispersed pattern would make a difference in the mix of types of office activities in the C-3 District, as well as in the amount of growth. As described in the next subsections, a major difference in employment between Alternative 3 and Alternatives 4 and 5 results from the greater extent to which office activities would be able to shift from the central subareas to more peripheral locations within the C-3 District under Alternative 3. A comparison of employment by individual office activities in Table V.C.4 highlights these differences.

The effects of Alternative 3 policies on employment in the C-3 District would be less than their effect on space to the extent that businesses adapt to higher costs by using space more efficiently. The forecasts assume that office employment densities would increase by one and one-half percent by 2000 to reflect an adjustment to higher rents. Changes in the mix of business activities with different employment densities would offset this increase so that office densities in 2000 would be the same as they were in 1981 (see Table V.C.5).

Alternative 4

Under Alternative 4, C-3 District employment in 2000 would be 368,000, representing a 14 percent increase in employment between 1990 and 2000 and the addition of 45,100 jobs (see Tables V.C.2 and V.C.3). This would be about 70 percent of the employment growth in the baseline forecast. Total employment in 2000 under Alternative 4 would represent about 95 percent of the 2000 total for the baseline forecast.

A primary difference between Alternative 4 and the baseline forecast would be lower growth of office activities (32 percent less growth). There would be differential effects among types of office activity as described in Table V.C.4.

Although Alternative 4 policies would result in the lowest office growth of the five Alternatives, there would be relatively more office growth in the prime locations than in more outlying subareas. This pattern would allow many of those activities with a strong preference for a central location to locate there. Higher rents and strong demand from those able to pay the higher price would make it more difficult for lower rent payers to compete for these locations.

Under this Alternative, the location options for lower rent payers in outlying subareas would be limited. New development would be relatively more costly (less profitable) in these subareas, and there would be less new space provided as a result. Conversions would not be allowed or would not be feasible, further reducing the potential supply of space in the non-central locations. (See section IV.B., Land Use and Real Estate Development.) Consequently, this Alternative would have a greater effect on the C-3 District growth of large space users and of those smaller businesses that are the most price sensitive than on those activities most able to compete for the central locations.

Although large space users and small price-sensitive businesses would be affected the most by Alternative 4 policies, these are two different types of activities, and the magnitude and nature of the effects would be different for each. Growth of employment in large space using activities (information processing and administrative functions of larger companies) would be lowest relative to the baseline forecast. Under Alternative 4, employment growth in these activities would be only about one-quarter of the baseline forecast growth. On the other hand, employment growth in smaller business services, wholesaling, transportation and communications businesses would be three-quarters of the baseline forecast growth. The amount of growth of activities of these types would be affected less than would the mix of types of

businesses. The smallest, most price-sensitive firms would be the first to locate outside the C-3 District.

Growth in those businesses and organizations partially dependent on the overall level of activity in the C-3 District would also be lower than the baseline forecast. The growth of retail services would be about one-half as much as the baseline forecast because of the cost consciousness of many in this group. Employment in the group of activities referred to as cultural/institutional/educational would experience a small decline under this Alternative because of the higher rents for a C-3 District location.

Because of the strong demand for lower rent space under Alternative 4, an overall increase in employment density would be likely. The forecast assumes an increase of five percent above the Alternative 1 scenario. With these adjustments, overall office activities would increase in density by about three to four percent by 2000 (see Table V.C.5). The rate of adjustment made by space users over this time period would not be likely to be sustained at that level beyond 2000. Thus, while some increases in density would still occur, employment growth beyond 2000 would be affected more than shown by the Alternative 4 scenario for the 1990 to 2000 period.

Reduced office development in the more peripheral subareas would limit the pressure on employment in the industrial group of activities. As a result, the employment forecasts assume a relatively small decline in employment in industrial/warehouse/automotive/parking activities under Alternative 4. While the policies under this Alternative would result in retaining some of these jobs in the C-3 District, some industrial activities would still leave the study area, as indicated in Table V.C.3. Moreover, with such strong pressure from office activities seeking lower cost space, it is probable that uses would change within some industrial/warehouse space without formal conversion. The result would be the provision of lower cost office space, which is in particularly short supply under this Alternative, at the expense of some industrial/warehouse activities. Therefore, it is not likely that Alternative 4

would result in as great a retention of industrial employment as indicated. The more likely result (greater decline in employment) is difficult to quantify.

Alternative 4 would also have some effect on hotel and retail activity. Hotel employment growth would be about nine percent less under this Alternative than under the baseline forecast. That difference would result from policies which affect the hotel space added in the C-3 District and from somewhat reduced business travel in the study area because of overall lower office growth. Retail employment growth would be about 70 percent of the baseline forecast because of fewer downtown workers and slightly less tourist activity. Retail activity as measured by the growth of sales, however, would represent about 90 percent of the baseline forecast./9/

Alternative 5

Under Alternative 5, C-3 District employment would be 369,000 in 2000 (see Tables V.C.2 and V.C.3). Jobs would increase by 46,300 between 1990 and 2000, an increase of 14 percent. Alternative 5 would accommodate about 72 percent of the C-3 District employment growth under the baseline forecast. Total employment in the C-3 District in 2000 would represent about 95 percent of the baseline forecast.

Office employment growth under Alternative 5 would represent 72 percent of the baseline forecast and hotel employment growth would represent 91 percent. Retail employment growth would be 73 percent of the baseline forecast while retail sales growth would represent about 90 percent./9/ There would be a small loss of employment in the cultural/institutional/educational group (instead of an increase as under the baseline forecast), and there would be a decline in the industrial/warehouse/automotive/parking group (slightly less than the decline in the baseline forecast).

Among the business activities in the office group (see Table V.C.4), about 80 to 85 percent of the growth of those with the highest

preference for a downtown location would occur in the study area (headquarters and top office functions). Compared with the baseline forecast, about 75 to 80 percent of the growth of business services, wholesaling, and non-utility TCU firms would still locate in the C-3 District. Alternative 5 would have more effect on data processing and administrative functions and utilities where only about 40 percent of the baseline forecast growth would occur in the C-3 District. The resultant growth of office activities in the C-3 District under Alternative 5 would be most similar to Alternative 4.

The strong demand for C-3 District office space under this Alternative would result in more intensive use of existing space. This would occur as businesses who are faced with higher rents take actions to use space more efficiently. It is estimated that employment densities for office activities would increase five percent by 2000. When this change is combined with changes in the mix of office activities downtown (each with different densities), overall office employment densities would increase by 2000, by three to four percent (see Table V.C.5). This would be similar to the pattern for Alternative 4. Since this rate of adjustment would not be sustained beyond 2000, the differences between Alternative 5 employment growth and the baseline forecast after 2000 would be somewhat greater than shown here for the 1990 to 2000 period.

The growth of hotel and retail activity would also be affected. Slightly less hotel employment growth would result from policies which affect the hotel space added in the C-3 District and from somewhat reduced business travel in the study area, due to lower employment growth overall. Retail growth would also be lower as a consequence of fewer downtown workers and slightly less tourist activity.

Areas Outside the C-3 District

The Alternative scenarios described above indicate that the policy choices incorporated in the Alternatives would affect business activity and employment in the C-3 District. Since growth still occurs in all

V. Environmental Impacts

Alternatives, the discussion of business and employment impacts focuses on those types of businesses and jobs that would not be in the C-3 District as a result of reduced supply of space and/or increased rents, relative to the conditions of the baseline forecast. This section considers where these activities might be located if not in the C-3 District.

Many, if not most, of the businesses and jobs could be located elsewhere in San Francisco if not in the C-3 District. Whether they would still be in the City largely depends on land use and related policies in other City areas, particularly in the areas to the south of the C-3 District (south of Market and Mission Bay). A well-coordinated effort to direct growth south of Market could provide acceptable locations for many business activities, although not all of those affected would be retained, as discussed below. However, shifts to the south would not occur if those C-3 policies responsible for the differences between Alternatives were applicable in these other City areas as well./10/ To a much more limited extent, current policies and changes in policy in the City's non-downtown commercial districts could also have an effect on overall activity patterns.

The answer to the question "where else if not in C-3?" is complex because it varies by business activity, depending on markets served (local, regional, west coast, national or international), on size of companies, and on the functional make-up of operations. Further, forecasts similar to those prepared for the C-3 District have not been done for other competitive areas. Generalizations are possible, however, often by way of example.

Back-office functions of larger companies already based on the C-3 District (FIRE, manufacturing, and utilities, for example) would consider locations south of the C-3 District as well as other regional locations when faced with more costly options in the C-3 District. Policies in other City areas would have a significant effect on where these jobs are located.

Many of the smaller companies affected by the Alternatives (business services, wholesale, non-utility TCU firms) would still seek locations in relatively central, accessible places where rents are not as high as in the C-3 District. Many would look to other City locations. The policies in these areas are particularly important in how they affect the use of existing space in older buildings. Locations elsewhere in the region would be the other options for most of these activities. Some small firms, especially those run by City residents, might look to City locations in neighborhood districts. Others might locate in more distant industrial areas of the City.

Business activities that would be the most likely to select locations outside of the region if they could not find suitable space in the C-3 District are the ones least likely to be affected by the Alternatives. These include headquarters and executive functions of larger companies, those activities which serve them (primarily business services), branch offices of national and international companies, and companies that serve West Coast or Pacific Basin markets. To the extent that the Alternatives would have some effect on activities in this group, preferred alternate locations would probably be out of the region.

The situation for hotels, retail trade, and retail services depends on whether the Alternatives affect the demand for these uses (as a function of the amount of employment and business activity in the C-3 District) or affect their locational options. If demand is affected, these activities would tend to follow the locations of the office activities. This would apply to most of the differences among Alternatives for retail trade. For hotels, some of the effect of the policies would be to shift tourist activity to other San Francisco locations. For retail services, both of the above effects would occur. To a certain extent retail services are dependent on the overall growth of the C-3 District and would follow shifts in that activity to other areas. Retail services affected by higher rents would look to other San Francisco locations, including neighborhood areas, some would consider raising prices to cover increased costs, and some might go out of business. Locations outside of San Francisco would not be acceptable for most retail service activities.

Generally, the effects on activities in the cultural/institutional/educational and industrial/warehouse/automotive/parking groups would be to move these uses to more peripheral City locations. Some of the industrial activities in the latter group might also consider northern San Mateo County.

It is also possible that there would be an overall effect on the price of retail goods and retail and business services in the C-3 District, comparing the baseline forecasts to the lower growth Alternatives. This would occur as some businesses raise prices to cover increased costs, instead of moving to a less costly area. It would also occur if more marginal operations go out of business and are eventually replaced by establishments providing the same services at higher prices. If policies similar to those in the C-3 District were applied in other San Francisco locations, so that shifts within the City might not provide less costly options, price effects would be more noticeable.

Summary of Employment and Business Impacts

Table V.C.7 summarizes the employment impacts. It emphasizes that there would be employment growth in the C-3 District under all Alternatives. The differences among Alternatives would arise because of more or less growth over time. The table also points out that the Alternatives make relatively little difference in total employment in 2000 even though there would be a difference in the growth from 1990 to 2000. The Alternatives will have more effect on total employment after 2000 as the change from 1990 (when the effects of the Alternatives first begin to be seen) becomes a larger part of the total.

The differences among Alternatives as shown by the growth of employment from 1990 to 2000 could also change beyond that time, primarily because this first decade would be an adjustment period. However, since there are reasons why the differences among Alternatives could become both larger and smaller, the net effect is uncertain and may not change substantially from the 1990-2000 forecasts.

The differences in employment growth could get larger over time as there would be less ability to adjust space usage (employment densities) to compensate for higher rents. The rates of adjustment during the 1990 to 2000 period could not be maintained over the longer term, particularly under Alternatives 4 and 5. Thus, beyond 2000, the employment effects of the Alternatives would become more similar to the effects on space. However, as described earlier in this report, there are several other reasons why the differences in development (changes in space) among Alternatives could become smaller over time. If there are less differences in development there would also be less differences in employment growth.

Table V.C.8 provides a summary of business and employment impacts from the perspective of businesses and employers. As shown (reading across the table) there are differences among Alternatives in how the location options of various types of activities and firms would be affected. For example, the location options of large space users would be affected most by the choice of an Alternative. For any one Alternative (reading down the columns) the effect on location options varies depending on the perspective. Alternative 3 would have more impact on industrial activities than on hotels or office activities, for example.

TABLE V.C.7: SUMMARY OF C-3 DISTRICT EMPLOYMENT IMPACTS BY ALTERNATIVE

	1984	1990	2000 By Alternative				
			1	2	3	4	5
Total Permanent Employment	280,860	322,530	387,230	384,070	379,760	367,640	368,820
Employment Growth From 1984	--	41,670	106,370	103,210	98,900	86,780	87,960
Compound Annual Growth Rate From 1984	--	2.33%	2.03%	1.98%	1.90%	1.70%	1.72%
Total Employment As Percent Of Baseline Forecast	100%	100%	100%	99%	98%	95%	95%
Permanent Employment Growth 1990 - 2000			64,700	61,540	57,230	45,110	46,290
Employment Growth As Percent of Baseline Forecast			100%	95%	88%	70%	72%
Average Annual Construction Employment 1990 - 2000			5,350	5,260	4,900	4,250	4,200
SOURCE: Recht Hausrath & Associates							

TABLE V.C.8: COMPARISON OF ALTERNATIVES FROM THE PERSPECTIVE OF BUSINESSES/EMPLOYERS

	Alternatives				
	1	2	3	4	5
Cost of Doing Business in C-3 District	Lowest	Almost As Low As 1	Middle Level	Highest	Almost As High As 4
Comparison of Location Options in the C-3 District from Perspective of:					
• Office firms that value C-3 locations most and pay most to be there	A	A	B	C	C
• Small, rent-sensitive office firms	A	B	B	E	D
• Large space using office functions unwilling to pay high rents	A	B	C	E	E
• Hotel and retail activities	A	A	A	B	B
• Industrial, institutional, and other activities unable to pay higher rents	D	D	E	B	C

Key: A = Most Options
E = Least Options

NOTE: The evaluation presented in this table is limited to a narrow spectrum of economic factors that would be affected by the implementation of any one of the Alternatives. Full consideration of the differences among the Alternatives must account for the effects discussed in other sections of this report. The perspective is that of business activities (firms or functions within firms) evaluating a location in the C-3 District. The comparisons are relative evaluations among Alternatives. The low ranking is not the absolute minimum, and the high ranking is not the absolute maximum.

SOURCE: Recht Hausrath & Associates

C-3 DISTRICT JOB OPPORTUNITIES AND LABOR NEEDS

Permanent Employment

Information about future occupations and wages and salaries for C-3 District jobs describes how job opportunities are likely to change over time and vary among Alternatives. Table V.C.9 summarizes future C-3 District employment by occupation, and Table V.C.10 identifies the future mix of jobs by wage and salary categories./11/

Over time (1984 to 1990 and 1990 to 2000), C-3 District employment is forecast to increase in all occupations and in all wage and salary categories. Jobs in the professional/technical, managerial, and clerical occupations show the largest increase and would increase as a share of total employment. This is because office activities which employ large shares of these occupations show the largest job growth.

There would be growth of employment for crafts and operatives even though industrial activities decline in the C-3 District. Most of the job growth in these occupations is in the office sector. Job growth of sales and service workers would include a large share of the retail and hotel employment growth.

Among the wage and salary categories, jobs paying above \$15,000 (in 1982 constant dollars) would increase as a share of C-3 District employment. The largest increases in numbers of jobs would be in the \$15,000 - \$24,999 group while the largest percentage increases would be in the \$25,000 - \$49,999 and the \$50,000 - \$74,999 categories.

From 1984 to 1990, entry level jobs paying under \$15,000 would increase by 10,340. This growth would represent one-quarter of total job growth. Seventy-three percent of these jobs would be in the office sector. The rest would be in retail and hotel activities. From 1990 to 2000, employment paying under \$15,000 would increase by 11,030 - 15,830 jobs depending on the Alternative and would represent 23 - 25 percent of job growth. The majority of the increase in these jobs would

TABLE V.C.9: C-3 DISTRICT EMPLOYMENT BY OCCUPATION AND ALTERNATIVE, 1990 AND GROWTH
1990 - 2000 (a)

Occupation	1990 Total Employment No.	1990-2000 Employment Growth By Alternative									
		1	2	3	4	5	1	2	3	4	5
		No.	No.	No.	No.	No.	%	%	%	%	%
Professional/ Technical	82,840	18,680	17,700	16,670	12,990	13,470	28.9	28.8	29.1	28.8	29.1
Managerial/ Administrative	62,880	13,640	12,940	12,180	9,270	9,800	21.1	21.0	21.3	20.5	21.2
Clerical	94,930	19,230	18,360	17,330	12,440	13,300	29.7	29.8	30.3	27.6	28.7
Sales	20,740	3,090	2,990	2,670	2,240	2,300	4.8	4.8	4.7	5.0	5.0
Service	31,040	5,710	5,540	5,170	4,180	4,230	8.8	9.0	9.0	9.3	9.1
Crafts, Operatives and Other	30,100	4,350	4,010	3,210	3,990	3,190	6.7	6.6	5.6	8.8	6.9
TOTAL	322,530	64,700	61,540	57,230	45,110	46,290	100%	100%	100%	100%	100%

NOTE: These forecasts were developed by applying the 1981 mix of occupations for 18 individual business activity groups (from the Downtown EIR Employer Survey) to the employment forecasts for each group. Thus, the changes in occupations shown above arise from a changing mix of C-3 District business activities. While it is also possible that the mix of occupations within a business activity could change over time, data are not available for evaluating these changes. See Appendix H for more detailed discussion.

(a) Includes permanent C-3 District employment and excludes construction labor (see Table V.C.11).

SOURCE: Recht Hausrath & Associates

TABLE V.C.10: C-3 DISTRICT EMPLOYMENT BY WAGE AND SALARY CATEGORY AND ALTERNATIVE, 1990 AND GROWTH 1990-2000 FOR ALTERNATIVES (a)

Wages and Salaries (b)	1990 Total Employment	1990-2000 Employment Growth By Alternative									
		1		2		3		4		5	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Less than \$12,000	35,790	11.1	6,240	9.7	5,910	9.6	5,470	9.6	3,680	8.2	4,130
\$12,000 - 14,999	61,530	19.1	9,590	14.8	9,200	14.9	8,160	14.3	7,550	16.7	6,900
\$15,000 - 24,999	109,220	33.9	22,110	34.2	21,030	34.2	19,660	34.3	14,990	33.2	15,630
\$25,000 - 49,999	85,280	26.4	19,480	30.1	18,450	30.0	17,340	30.3	13,350	29.6	14,000
\$50,000 - 74,999	18,270	5.7	4,870	7.5	4,640	7.5	4,370	7.6	3,680	8.2	3,730
\$75,000 and Above	12,440	3.8	2,410	3.7	2,310	3.8	2,230	3.9	1,860	4.1	1,900
TOTAL	322,530	100%	64,700	100%	61,540	100%	57,230	100%	45,170	100%	46,290

NOTE:

These forecasts were prepared by applying the 1981 distribution of jobs among wage and salary categories for 18 business activity groups (from the Downtown EIR Employer Survey) to the employment forecasts for each group. The changes shown above arise from a changing mix of C-3 District business activities. While it is possible that the distribution of wages and salaries within a business activity could change over time, data are not available for evaluating these changes. See Appendix H for more detailed discussion.

(a) Includes C-3 District permanent employment and excludes construction labor (see Table V.C.11).
 (b) Constant 1982 dollars.

SOURCE: Recht Hausrath & Associates

continue to be in the office sector. Lower wages are used here as a proxy for entry-level positions which do not require extensive skills, training, or experience.

Jobs paying \$50,000 or more are those requiring the most education and experience. These would represent about 10-12 percent of future C-3 District job growth. This would leave the largest share of job growth, about 65 percent, in the \$15,000 - \$25,000 and \$25,000 - \$50,000 categories, the largest growth occurring in the lower wage/salary category.

The effect of the Alternatives on C-3 District job opportunities is highlighted by comparison of the changes 1990 to 2000. First, there would be differences in the growth of number of jobs of each type. For example, there would be a larger increase in clerical jobs under Alternative 1 (19,230) than under Alternative 4 (12,440).

Second, there would be differences in the relative mix of job growth by occupation and wage and salary categories. For example, the percentage of C-3 District employment growth represented by clerical jobs would be 30.3 percent under Alternative 3, 29.7 percent for Alternative 1, and 27.6 percent for Alternative 4. Differences in these percentages arise because of different mixes of employment growth by business activities which each have different labor needs.

Labor needs for Alternatives 1 and 2 would be very similar. Alternative 2 has less total employment growth than Alternative 1, so the growth of jobs of various types would be lower in all categories. However, the percentage distributions of job growth among occupations and wages and salaries would be fairly similar for these Alternatives.

Alternative 3 would show a somewhat different pattern of changing labor needs than the other four Alternatives. Professional, managerial, and clerical workers would represent higher shares of job growth under this Alternative than under other Alternatives, and sales, craft, and operative workers would represent lower shares. This Alternative also would have the largest shares of workers in the two middle wage and salary categories. This pattern would result from the mix of employment growth by business activities under Alternative 3. Strong office growth and the largest decline of industrial group employment (because of the dispersed pattern of development) would result in the larger share of growth represented by office activities. The dispersed development pattern would allow the retention of a share of back-office functions with more middle-level personnel.

Labor needs under Alternatives 4 and 5 indicate relatively higher shares of workers in the crafts, operatives, service, and sales occupations, although lower growth in numbers of jobs of these types. This would be less decline of jobs in the industrial group, and relatively greater growth of retail and hotel activities, since office activities would be more affected by the policies of these Alternatives. Among office activities, the information processing and administrative functions of larger firms as well as the more price-sensitive smaller firms would be most affected. Hence, there would be lower shares of growth in clerical occupations. The differences between Alternatives 4 and 5 reflect less growth of office activities and less decline of industrial activities under Alternative 4.

Alternatives 4 and 5 would have the lowest relative growth of jobs with the lowest wages and salaries and the highest relative share of jobs with the highest wages and salaries.

Construction Employment

The occupations and wages and salaries for construction employment are shown in Table V.C.11 for each Alternative. Among occupations, most of the jobs would be for crafts workers. Because of the experience and skills required for these jobs, most would be in the wage and salary category of \$25,000 - \$50,000. Project management functions would require managerial and clerical jobs.

The differences among Alternatives would result from different levels of construction activities. The mix of types of labor would not be affected.

Summary of Impacts on Job Opportunities

Table V.C.12 compares the impacts of the Alternatives on job opportunities in the C-3 District, from the perspective of labor force members: workers with a range of education, experience and training, already employed, or seeking jobs in downtown San Francisco. Overall, Alternatives 1 and 2 offer the most additional jobs in the C-3 District, Alternatives 4 and 5 the least additional jobs, and Alternative 3 falls in the middle of the range.

The impacts (in terms of job opportunities) are different for different groups of workers (reading across the table). Office workers, however, no matter what level, (entry, middle or top), would find almost the same degree of impact across all Alternatives. Their opportunities would be proportional to overall employment growth in the C-3 District under each Alternative. The degree of impact does vary comparing the perspective of office workers to other groups of workers. Among non-office workers, entry level sales and service workers and construction workers would be better off under almost all Alternatives, relative to the other types of workers. The impact of the Alternatives, in terms of limiting opportunities, is relatively great for crafts, operatives and laborers in all Alternatives except Alternative 4.

V. Environmental Impacts

For any one Alternative (reading down the columns), the table shows that the impacts differ (more or less job opportunities) depending on the worker's perspective. The differences among groups of workers would be most pronounced in Alternative 3. In Alternatives 4 and 5, the workers perspective makes a large difference in assessing the impacts of the Alternatives. In Alternatives 1 and 2, the impacts are more similar among the groups of workers.

TABLE V.C.11: ANNUAL AVERAGE C-3 DISTRICT CONSTRUCTION EMPLOYMENT - BY OCCUPATION,
WAGE AND SALARY CATEGORY AND ALTERNATIVE

	1984-1990	1990-2000 By Alternatives				
		1	2	3	4	5
<u>Occupations</u>						
Crafts	4,470	4,460	4,380	4,080	3,540	3,500
Managerial	670	670	660	610	530	520
Clerical	230	220	220	210	180	180
<u>Wages and Salaries (1982 Dollars)</u>						
\$12,000 - 14,999	230	220	220	210	180	180
\$25,000 - 49,999	5,140	5,130	5,040	4,690	4,070	4,020

NOTE: These forecasts were prepared by applying the 1981 distributions to the forecast annual average construction employment. See Appendix H for a more detailed discussion of the methodology.

SOURCE: Recht Hausrath & Associates

TABLE V.C.12: COMPARISON OF ALTERNATIVES FROM PERSPECTIVE OF LABOR FORCE MEMBERS/EMPLOYEES

Relative Number of Job Opportunities in C-3 District	Alternatives				
	1	2	3	4	5
	Most	Almost As Much As 1	Middle	Least	Almost As Low As 4
Comparison of Job Opportunities in the C-3 District from Perspective of:					
• Entry level office workers	A	B	C	E	D
• Entry level sales and service workers	A	A	A	B	B
• Mid-level office workers	A	B	C	E	D
• Non-office crafts, operatives and laborers	D	D	E	B	C
• Experienced professional, executive and other top level workers	A	A	C	E	D
• Construction workers	A	A	B	C	C

Key: A = Most Opportunities
D = Least Opportunities

NOTE: The evaluation presented in this table is limited to a narrow spectrum of economic factors that would be affected by the implementation of any one of the Alternatives. Full consideration of the differences among the Alternatives must account for the effects discussed in other sections of this report. The perspective is that of business activities (firms or functions within firms) evaluating a location in the C-3 District. The comparisons are relative evaluations among Alternatives. The low ranking is not the absolute minimum, and the high ranking is not the absolute maximum.

SOURCE: Recht Hausrath & Associates

NOTES - Business and Employment

- /1/ Rents are considered here in a long term context. It is recognized that short term cycles of higher and lower rents will continue to occur as the market constantly adjusts supply and demand. The assumption that rents remain at current levels in constant dollars applies in the long term context. Constant rent levels over time refer to the rent levels associated with space with various characteristics (type, use, quality). It is possible that rents for a particular property could change over time if the use changed, but the rent levels for a particular use are assumed to stay constant.

Present rent levels are those described in Table IV.B.3 and also discussed in section V.B and Appendix G. They are rent levels which assume that space in new buildings is available, some in the most preferred locations, some in locations becoming more competitive with the most preferred locations, and some in moderate rent buildings in less desirable parts of the C-3 District.

- /2/ The reader is reminded that the land use policies assumed under Alternative 1 are not the same as the policies being applied today. (See discussion in Section V.B.) However, the supply of space which currently exists in the C-3 District is most similar to the supply which would exist under the rules of Alternative 1, if it were chosen to apply in the future. There is a time lag between changes in the rules for new development (such as the application of present interim policies) and the effect of those new rules on the supply of space available for occupancy.
- /3/ Appendix H describes the process of "matching" the space provided and the forecast employment growth under the baseline forecast. Section V.B., Land Use and Real Estate Development Impacts, and Appendix G discuss the extent to which real estate market conditions (supply and rent factors) would differ under each of the Alternatives.
- /4/ Retail sales have increased at a faster rate than retail employment in the past. Between 1970 and 1979 retail sales (selected categories: apparel, general merchandise, specialty goods, eating and drinking out) in San Francisco grew in real terms 1.92 percent per year, compounded. During the same period, retail employment in these same categories grew at an annual rate of 1.49 percent. (State Board of Equalization, Taxable Sales in California, 1970 and 1979, and U.S. Department of Commerce, County Business Patterns: California, 1970 and 1979.) There are several explanations for this observation. More sales can occur in existing retail space without proportional increases in employment. This happens when existing stores remodel their facilities or undertake new merchandising techniques (as has occurred recently in several major Union Square department stores). It can also be attributed to turnover of types of stores, as older stores are replaced by outlets selling higher priced merchandise (in real terms) appealing to a different customer base. The factors are set forth in Appendix H as part of the background to the baseline forecast for

NOTES - Business and Employment (Continued)

retail trade. A forecast of retail sales growth has been prepared (see Appendix H) for particular application in the Fiscal Section (V.G) of this study.

- /5/ The procedure for "matching" employment growth and the space provided in pipeline projects is described in Appendix H (see particularly pages H.37 - H.39). This procedure accounted for new space built, space demolished for new construction, the conversion of some existing space to office use, and absorption of the oversupply of newly built space as of 1984. The approach was done from the perspective of business activities looking for space with various qualities, locations, and rents. The results indicated that the baseline forecast of economic activity and employment could be accommodated and would apply under all Alternatives.

- /6/ Throughout this discussion construction employment is handled separately from permanent employment. Effects on construction employment are the direct consequence of the amount of new construction, conversion and ongoing upgrading that would occur over a given time period. Thus, construction employment lasts for the duration of the construction period and is not necessarily permanent employment. Construction workers are employed when and where their particular skills are required. Therefore, construction employment due to building activity 1984-1990 and 1990-2000 is expressed as person-years of construction employment. (A person-year is a unit of labor equivalent to one construction worker's average annual wages). Over the 1984 to 1990 period, forecast building activity would support 32,190 person-years of construction employment, or annual average employment of about 5,370 ($32,190 \div 6 = 5,370$). It should be noted that "construction jobs" as used in the text and tables refer to an amount of labor, not necessarily to individual workers. Appendix H contains more detail on the methodology and assumptions used to estimate construction employment.

- /7/ It is not surprising that Alternative 1 policies accommodate the employment growth of the baseline forecast. Alternative 1 policies would result in real estate market conditions typical of the last couple of decades. The baseline employment forecast assumes these same market conditions.

It should be understood that real estate market conditions typical of the past decades refer to the ability of the market to accommodate economic growth within the context of the existing development pattern and the existing rules which have governed the market's ability to provide new development. Policies which change the rules controlling where development can occur and/or the size, type, and quality of new development would change market conditions.

- /8/ The increase in office employment densities under Alternatives 2, 3, 4, and 5 are applied to all office activities (in total space) and not just to the growth over the 1990-2000 period.

NOTES - Business and Employment (Continued)

- /9/ Retail forecasts were prepared for sales, employment, and space as described in Appendix H. Generally, sales show the most growth over time and the least differences between Alternatives. Sales are probably the best measure of the level of retail activity.

Retail employment grows at a lower rate than sales, since sales per employee are expected to increase. There are also differences among Alternatives in the changes in the ratio of sales per employee. Space also grows less than sales since changes are expected in sales per sq. ft. of space. Changes in this ratio also vary by Alternative. The forecasts of retail sales, employment and space are presented and compared in Appendix H.

- /10/ See discussion in the previous section (V.B) under "City and Region", for consideration of how major policy differences for areas outside the C-3 District might affect the extent to which activities could shift from the C-3 District to other areas in San Francisco.

- /11/ The differences among Alternatives in terms of future occupational mix and wage/salary distribution are probably understated in Tables V.C.9 and V.C.10. The reason is that changes are likely to occur within business activity groups that cannot be accurately quantified with available data. For example, the forecasts here reflect differences in the increase in jobs in business services or TCU relative to employment increases in other categories. They do not incorporate potential changes within these activities (such as the occupational differences between utilities and non-utility TCU firms). With available data from the Downtown EIR Employer/Employee Survey, separate occupation and wage/salary distributions could be identified only for executive/administrative and administrative/data processing functions in the case of FIRE. Similar distinctions probably exist for other groups. However, a larger survey sample would be required to develop accurate estimates.

D. RESIDENCE PATTERNS AND HOUSING FOR C-3 DISTRICT WORKERS

INTRODUCTION

There are two main purposes for the housing analysis done as a part of this study. One is to forecast future residence patterns for C-3 District workers in terms of the percentage and number of workers who would live in San Francisco and in other counties throughout the region. These forecasts identify how San Francisco residents would share in the growth of downtown jobs and they are useful in considering the relationship between C-3 District job growth and labor force and housing throughout the region. Future residence patterns are also a necessary input into the transportation analysis and they are part of the consideration of housing market impacts.

The second purpose is to specifically address the implications of C-3 District employment growth on housing in San Francisco. The potential effects considered are those on housing availability and prices/rents in neighborhoods throughout the City.

This section is divided into two parts, each addressing one of these major issue areas.

FUTURE RESIDENCE PATTERNS

Approach

Future residence patterns of C-3 District workers depend on many local and regional factors. These include the following:

- The number of jobs of various types in the C-3 District since different jobs employ labor with different demographic and household characteristics and different housing preferences; /1/
- The size and distribution of the labor force throughout the region as affected by labor force participation and housing development;

- Employment growth in the C-3 District, elsewhere in San Francisco, and in the rest of the region as influencing how jobs in the C-3 District compete for labor;
- Transportation systems as affecting the accessibility (time and cost) of C-3 District job locations relative to places of residence;
- Demographic, household, and lifestyle characteristics of the region's population as affecting housing needs and preferences for units of various types and in various locations (such as the ethnic/racial mix, overall age distribution, preferences for inner-city living, or the number of workers per household); and
- The cost of housing relative to other goods and services and differences in the relative cost of housing among locations within the Bay Area.

Over time, residence patterns change as individuals move in and out of the region, change their household and lifestyle patterns, change their housing within the region, change their labor force status, and change their jobs. While employment plays a role, it is difficult to isolate and measure the effect of only one of the important factors.

The approach for forecasting future residence patterns of C-3 District workers began with an evaluation of recent changes in residence patterns within the context of trends in the types of factors listed above. It next involved consideration of future changes in demographics, housing, and labor force factors separate from specific assumptions about the C-3 District. Basically, this step evaluated if and how recent trends are likely to continue. Then consideration was given to the C-3 District within this future context. Each of the five C-3 District Alternatives was evaluated in terms of how the amount of job growth in business activities of various types could affect the demand for housing and of the potential effect of policies incorporated in each Alternative on the supply of housing.

The forecasting approach is most sensitive to the split between workers who reside in San Francisco and those who live outside of the City and commute to work. The role of C-3 District employment relative to other factors is more important in San Francisco than in other counties.

V. Environmental Impacts

Further, C-3 District housing policies directly affect the supply of housing in the City and not the supply in other counties. Beyond this initial division, forecasts were prepared of residence patterns for workers in other counties of the region and within San Francisco.

The rest of this sub-section describes the recent trends reflected in changing residence patterns, the future context for the City and the region, the effect of the Alternatives on the supply of housing in San Francisco, and the forecasts of future residence patterns of C-3 District workers.

It is important to understand that the forecasts describe what is likely to occur in the future given C-3 District job growth and changes in all of the various factors considered. As such the forecasts are likely future outcomes. They do not identify the C-3 District workers who might want to live in each county or who might demand housing of various types or at various locations.

Changing Residence Patterns

Trends indicate that the number of San Francisco residents working in the C-3 District is increasing while the percentage that they represent of total C-3 District jobs is declining. Changes in population, labor force, and employment in San Francisco and the rest of the region provide background for this trend.

Population And Employment In San Francisco

Changes in the demographic make-up of the City's population have resulted in a growth of employed persons despite the overall decline in total population. As shown in Table V.D.1, City population declined by 36,700 persons from 1970 to 1980 while the number of employed persons increased by 24,200. The growth of employed persons is a change from the decline experienced during the 1960's. The declining total population, however, is a continuation of past trends.

TABLE V.D.1: TRENDS IN POPULATION AND EMPLOYMENT IN SAN FRANCISCO, 1960, 1970, and 1980

	Total			Change			
	<u>1960</u>	<u>1970</u>	<u>1980</u>	1960 - 1970		1970 - 1980	
				No.	Percent	No.	Percent
Population	740,316	715,674	678,974	-24,642	-3.3%	-36,700	-5.1%
Civilian Labor Force	352,858	340,075	364,689	-12,783	-3.6%	24,614	7.2%
Employed Residents	331,156	318,311	342,484	-12,845	-3.9%	24,173	7.6%
Population 16-64 yrs.	481,893	473,623	474,379	-8,270	-1.7%	756	0.2%
Population Under 16 yrs.	164,815	142,313	100,310	-22,502	-13.7%	-42,003	-29.5%
Population 65+ yrs.	93,608	99,738	104,285	6,130	6.5%	4,547	4.6%
Households	292,345	295,265	298,956	2,920	1.0%	3,691	1.3%
<hr/>							
Persons Per Household (a)	2.44	2.34	2.19	-.10	-4.1%	-.15	-6.4%
Employed Persons Per Household (b)	1.13	1.08	1.15	-.05	-4.4%	.07	6.5%
Employed Persons As Percent of Population	44.7%	44.5%	50.4%				
Population 16-64 As Percent of Population	65.1%	66.2%	69.9%				
<hr/>							
Residents Working in San Francisco	307,975	283,615	293,166	-24,360	-7.9%	9,551	3.4%
Percentage of Employed Residents Who Work In San Francisco (c)	93.0%	89.1%	85.6%				
San Francisco Employment (d)	441,243	494,129	578,600	52,886	12.0%	84,471	17.1%
Percentage of San Francisco Jobs Held By Residents (e)	69.8%	57.4%	50.7%				

TABLE V.D.1: TRENDS IN POPULATION AND EMPLOYMENT IN SAN FRANCISCO, 1960, 1970, and 1980
(Continued)

NOTE: Except as noted below, the data in this table are from 1960, 1970, and 1980 Census Reports. The 1980 Census data are from tabulations of files STF-1 and STF-3 prepared by the California State Census Data Center.

- (a) These figures exclude group quarters.
- (b) These ratios were derived by dividing the number of employed residents by the number of households. Since employed residents living in group quarters are not excluded, the ratios may overstate the per-household figures by a small amount. To the extent there are overestimates, these ratios are not entirely comparable to the ratios for all persons per household in the item above.
- (c) These percentages are derived by dividing the number of City residents working in San Francisco by the total number of employed City residents.
- (d) Since there is no consistent series of employment data, these estimates may not accurately reflect the amount of growth in each 10-year period. The 1960 employment figure is from ABAG ("The Growth of San Francisco: Three Futures for the Year 2000" prepared for Arthur Andersen & Co., May 1982). The 1970 figure is from County Business Patterns. The 1980 figure is from EDD as adjusted by RHA to include self-employed persons (see Table IV.D.9). This 1980 estimate is similar to the figure (579,900) for 1980 in County Business Patterns.
- (e) These percentages are derived by dividing the number of San Francisco jobs by the number of City residents who work in San Francisco. The estimate for 1970 of 57.4 percent is lower than the 60 percent figure reported in the 1970 Census Journey To Work publication. The percentages for all years are approximate because of the possible inconsistencies between Census data and employment figures. However, they clearly indicate a declining trend.

SOURCE: Recht Hausrath & Associates

The growth of employed residents largely reflects higher labor force participation since the population aged 16 to 64 has been relatively stable./2/

During the 1970's the decline in the City's population came entirely from the decline in the population under 16 years of age (a decline of nearly 30 percent as shown in Table V.D.1). In addition to a small increase in residents aged 16 to 64, there has been a continuing increase in residents 65 years of age and older.

The number of households in the City has continued to increase, although by a relatively small amount. Given the population decline, the average number of persons per household has also declined. Because of the changing make-up of the population, however, the number of adults and of employed adults per household has increased. The decline has come in the number of children per household.

From 1970 to 1980, the number of employed City residents working in San Francisco increased by about 9,600. Although the percentage of residents working in the City remains high, 85.6 percent in 1980, this percentage has been declining. Reasons for this trend include the large growth of jobs in other counties of the region and the relocation of some San Francisco jobs to other counties. San Francisco's share of total regional employment has declined even though the City's employment has increased substantially. Another factor is the increase in households with more than one worker which increases the likelihood that some workers will commute to jobs outside the City.

Business activity and employment have continued to grow in San Francisco. Jobs have grown at a faster rate and by a larger amount than has the number of employed residents in the City. Thus, although the number of jobs held by City residents has increased, the percent of jobs held by residents has declined. In 1980, just over one-half of the jobs in San Francisco were held by residents as shown in Table V.D.1./3/ The declining percentage of jobs held by residents over the past twenty years reflects the fact that the labor force in the

City has not grown as much as employment while population and labor force in areas outside of San Francisco have grown by much larger amounts than they have in the City.

Data for C-3 District employment and employed residents are not available for 1970 or 1960. As identified in the Housing Setting Section (see Table IV.D.9), currently about 45 percent of employed City residents work in the C-3 District and about 57 percent of C-3 District jobs are held by residents. Given the large growth of C-3 District employment during the 1970's it is probable that the number of City residents working in the C-3 District also increased during that period. It is possible that the percentage of residents working in the C-3 District remained fairly stable or even increased since those working in the C-3 District as a share of all residents working in the City likely increased./4/ From the perspective of employment, however, the share of C-3 District jobs held by residents probably declined because of the large amount of job growth relative to the lower growth of the City's labor force.

Trends In The Rest Of The Region

Demographic trends relating to age and labor force characteristics of the region's population outside of San Francisco show similarities to the trends for the City described above. From 1970 to 1980, the growth of employed persons exceeded the growth of the total population. Employed residents in the rest of the region increased by 670,000 (nearly 45 percent growth) over the past 10 years while population increased by 588,000 persons (about 15 percent growth). This reflects both the passing of the "baby boom" generation into their labor force years (26 percent increase in population 16 to 64 years and 14 percent decline in population under 16) and the increasing labor force participation of women. The growth of employed residents exceeded the growth of households so the average number of workers per household increased. The main differences between San Francisco and the rest of the region are in the magnitudes of the changes as the amount of growth was much larger in the rest of the region than in San Francisco.

Over time, there has been an increase in the number of persons living outside of San Francisco who work in the City. From 1970 to 1980, there was an increase of about 75,000 such workers. This growth also represented an increase in the percent of San Francisco jobs held by non-San Francisco residents. This trend reflects the larger growth of the labor force outside the City. By comparison, from 1970 to 1980, employment growth in San Francisco represented about 12 percent of total region-wide employment growth while the growth of the City's labor force represented about 3.5 percent of the total increase for the region. However, because of the large growth of the region's labor force and the growth of employment in areas outside of San Francisco, there also was a decline in the percentage that those working in San Francisco represent of all employed persons living outside the City. In 1980, about 13 percent of the employed persons living outside of San Francisco worked in the City and held about 49 percent of the jobs in San Francisco.

There has also been an increase in the number of persons living outside of San Francisco and working in the C-3 District and an increase in the percent of C-3 District jobs that they represent. Because of the relatively large growth of C-3 District jobs it is possible that the C-3 District now employs a larger share of the workforce in the rest of the region than it did in 1970. In 1980, about 5 percent of the employed persons living outside of San Francisco worked in the C-3 District. They held about 43 percent of C-3 District jobs.

Summary of Changes In San Francisco Employment And Residence Patterns

Recent changes in employment in San Francisco and in the location of employed labor throughout the region are summarized in Table V.D.2. This table combines the information about San Francisco and the rest of the region. It describes the relationship between the changes in jobs and the changes in residents./5/ Although the changes are for the City overall, the same general pattern applies to the C-3 District.

TABLE V.D.2: RELATIONSHIP OF CHANGES IN EMPLOYMENT AND RESIDENCE PATTERNS, 1970 to 1980

	San Francisco		Rest of Region	
	1970	1980	1970	1980
Employed Residents (a)	318,300	342,500	1,505,000	2,174,000
-Number Employed in San Francisco (b)	283,600	293,200	210,500	285,400
-Percent Employed in San Francisco	89.1%	85.6%	14.0%	13.1%
Jobs in San Francisco (c)	494,100	578,600	-	-
-Number of San Francisco Jobs Held By Employed Residents	283,600	293,200	210,500	285,400
-Percent of San Francisco Jobs Held By Employed Residents	57.4%	50.7%	42.6%	49.3%
Increase in Employed Residents	24,200		670,000	
Increase in Residents Employed in San Francisco	9,500		74,900	
Increase in San Francisco Jobs	84,500		-	
Increase in Residents Employed in San Francisco as a Percent of Increase in Employed Residents	39%		11%	
Increase in Residents Employed in San Francisco as a Percent of Increase in San Francisco Jobs	11%		89%	

NOTE: The Rest of Region includes all of the counties of the nine-county Bay Area except San Francisco which is shown separately. Since similar data is not available for the C-3 District, these figures are for all jobs and workers in San Francisco. The text discusses possible differences between these figures and those for the C-3 District.

TABLE V.D.2: RELATIONSHIP OF CHANGES IN EMPLOYMENT AND
RESIDENCE PATTERNS, 1970 to 1980 (Continued)

- (a) 1970 and 1980 Census data.
- (b) Census data for San Francisco. Figures for rest of region are estimated by subtracting the number of San Francisco residents employed in San Francisco from the number of San Francisco jobs. The estimates are slightly high to the extent that some workers employed in San Francisco live outside the region. That number is very small.
- (c) See Table V.D.1.

SOURCE: Recht Hausrath & Associates

The figures show that the increase in residents working in San Francisco as a percent of the increase in all employed residents is higher for San Francisco than for the rest of the region (39 percent compared to 11 percent). In other words, for San Francisco as compared to the rest of the region, the growth in residents who work has included proportionally more residents who work in the City.

From the perspective of jobs in San Francisco the figures show that while there has been growth in both the number of jobs held by City residents and the number of jobs held by residents of the rest of the region, the increase in employed San Franciscans has represented a smaller share of total City job growth than has the increase in the employment of those living outside the City (11 percent compared to 89 percent).

Role of Employment Growth In Changing Residence Patterns

The trends summarized above are net changes reflecting the combined influence of many factors. They are the result of all of the changes which occur when:

- workers are newly employed because of net increases in the number of jobs;

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- workers are newly employed because there is turnover in existing jobs as employees quit or are fired and others are hired, some of whom would not have previously worked in the City;
- workers are newly employed because of changes in the types of jobs (separate from the net growth of employment) as some businesses expand, some contract, some leave the City, and others move in; and
- workers change their place of residence for a variety of demographic, lifestyle, financial and employment reasons.

The first three changes above result in individuals being newly employed in the City who had not previously worked there. These changes can affect overall residence patterns if those newly employed have different household and housing characteristics from those whom they replaced or from all other workers in the City./6/ They are likely to have different characteristics if the mix of types of jobs is changing (such as more office jobs relative to other types of employment), if the demographic characteristics of the workforce in general are changing (such as changes in the age distribution or the ethnic/racial characteristics), or if there are changes in the distribution of the labor force within the region (such as more growth of labor force members in the areas surrounding San Francisco than in the City itself). All of these types of changes occurred in the 1970's and have contributed to the trends described previously.

The other type of change identified above specifically concerns housing market factors. As existing and newly employed workers change their housing, overall residence patterns can change. Housing factors have been particularly important in the recent past since the housing choices (housing types, prices, rents, locations) available have changed over the past five to ten years. Housing is now more costly relative to incomes and to other goods and services than it was in the past. Further, a greater share of the region's housing is now located outside of San Francisco and City housing has become more costly relative to housing in many other parts of the region than it once was. While housing choices change over time their effect on residence patterns primarily occurs when a household enters the market to purchase or

rent housing. Thus, as workers change their place of residence a greater share are likely to live outside of San Francisco and those who choose to reside in the City may have different characteristics from the average of all other employees who secured housing in San Francisco under a different market situation./7/

Thus, changes in residence patterns occur as individuals are newly employed in San Francisco who had not previously worked there and as existing and newly employed workers change their housing. As explained above, only some of these changes occur because of the growth of employment. Since the numbers of existing jobs and of existing workers are so much larger than the net growth of jobs and of workers over a given period, the overall changes in residence patterns which occur over time could be influenced more by the changes of the existing groups than by the growth of jobs and of persons newly employed because of job growth./8/

For example, the Downtown EIR Employee Survey indicates that each year about 20 percent of the workforce is newly employed downtown./9/ This change results from the growth of employment, from the movement of businesses in and out of the C-3 District, and from turnover of employees holding existing jobs (as workers quit, are fired, or are laid off and take a job outside the C-3 District, decide not to work, or retire). If this percentage applied throughout San Francisco it would indicate that, on average, about 107,300 people were newly employed in the City each year during the 1970's, including an average of 8,450 newly employed persons each year because of job growth. This would indicate that about 8 percent of those newly employed in the City each year are newly employed because of job growth./10/

Similarly, the Downtown EIR Employee Survey indicated that 25 percent of all C-3 District workers have changed their place of residence within the past year. If this percentage applied to workers throughout the City during the 1970's, it would indicate that, on average, about 134,100 workers moved each year during the 1970's, including those who moved among the group of workers newly employed each year

because of job growth. Even if all of these newly employed because of job growth moved when they were employed (8,450), they would represent about 6 percent of all workers who moved that year. While these figures do not indicate the number who might have moved into or out of San Francisco, they provide an indication that fewer of those moves occurred because of job growth than because of the changing residence patterns of those previously or newly employed in existing jobs./11/

These examples indicate the dynamic pattern of changes in the individuals employed in San Francisco jobs and of changes in the housing of City workers. It is because of this dynamic pattern that, during the 1970's, changes in residence patterns would have occurred over time even if there had been a different amount or even no employment growth in San Francisco.

Relative Importance Of Place Of Employment In Decision On Where To Live

The discussion above concludes that changes in residence patterns result from a combination of changes in the individuals who are employed in San Francisco and of changes in the places of residence of existing and newly employed workers. It also explains that only some of these changes occur because of job growth.

Related issues concern the relative importance of place of employment in the decision on where to live. Specifically, there are questions of whether those newly employed in the City are likely to change their place of residence when they become newly employed and of whether those who move have a strong preferences for San Francisco housing because they work in the City. These issues provide further explanation of the factors behind observed residence patterns.

Individuals who are newly employed in the C-3 District include persons who have been living in the Bay Area and persons who are new to the region. The Downtown EIR Employee Survey indicated that about 38 percent of those newly employed in the C-3 District within the last year had also moved to the Bay Area within the past year. For this group,

changes in place of residence occur at a similar time as changes in place of work. However, it is uncertain how many in this group came to the Bay Area because of a job in downtown San Francisco and how many moved here primarily for other reasons and then looked for a job.

The rest of those newly employed in the C-3 District include persons who already lived in the region. These individuals had either worked outside of the C-3 District or had not previously worked. The survey indicates that some of this group had moved within the year they were employed and others had not./12/ Of those who had moved, it is uncertain if or how their decision to move related to their change in place of employment.

The Downtown EIR Employee Survey asked all respondents about the relative importance of various factors in their household's decision to live at their present Bay Area location. The results clearly indicate that households make trade-offs between the time and cost of commuting to work, the cost and type of housing, and the characteristics of the neighborhood. More of those living in San Francisco and in nearby cities identified the time and cost of commuting to work as having a very positive influence on the choice of their current residence. More of those living in the outlying counties checked commuting as having a very negative influence on their housing decisions.

The Housing Setting, Section IV.D, describes the demographic and household characteristics of workers by county of residence. Characteristics such as age, household type, ethnicity/race, and household income are all important in interpreting how proximity to one's workplace is traded off with other factors. For example, younger, single individuals who prefer the lifestyle offered by living in San Francisco may be more likely to choose an apartment in the City that provides proximity to their jobs than would a similarly aged individual who prefers warmer weather and a more suburban setting and who lives with another person who works in an outlying county.

The relative importance of proximity to workplace can also change over time as one's household situation changes. A divorce, a marriage, the birth of children, and the moving out of older children are all events which can change housing preferences and the relative importance placed on various factors. For example, proximity to work may become more important to a divorced person who no longer must consider the workplace of a spouse or schools for children. Thus, the group of existing employees includes more households who could potentially move into San Francisco than does the group of newly employed workers in any one year, since the former is so much larger than the latter.

It is not necessarily the case that one considers a residence within proximity of one's workplace. Instead, one may consider jobs near to one's preferred place of residence. For example, an individual may strongly prefer to live in San Francisco and will select a job or continue to work in the City for that reason. Thus, being employed in San Francisco does not necessarily increase one's preference for housing in San Francisco.

Thus, it can be concluded that changing one's place of residence can be related to changing one's place of employment, although the two are not always related. Many other factors are involved. Further, changes in residence do not have to occur at the same time as changes in jobs. As for housing in San Francisco, one's place of work plays a role in the decision of where to live, but it is only one of many factors considered.

Future Context

The forecasts of future residence patterns of C-3 District workers were prepared within the context of forecasts and assumptions about how other factors besides C-3 District employment growth are likely to change over time. The future context for labor, housing and employment in the region and in San Francisco over the next 20 years is highlighted by the following:

- Labor force participation will continue to increase, but at lower rates of growth than occurred in the past ten years. Most of the baby boom generation has already entered the labor force, and the population overall is aging so that those over 65 years of age will represent an increasingly larger share of the population in the future. Although the labor force participation of women has already increased substantially, additional growth is forecast for the future.
- Because of slower growth in labor force participation, a given amount of job growth in the 1980's and 1990's will require more in-migration to supply the labor force. The location of new housing development will have increasingly more effect on the locational distribution of the expanding supply of labor.
- The production of housing throughout the region will recover from the low levels of the early 1980's. However, the availability and cost of housing is unlikely to return to the conditions of the 1970's. Housing will remain more costly relative to incomes and to other goods and services than it was in the 1960's and 1970's.
- Housing development will occur throughout the region with proportionally more expansion at the periphery and in the center of the region. The most potential for housing development, particularly in the more affordable price ranges, exists at the periphery of the region. From these locations there is more time and cost in traveling to and from jobs in San Francisco. The increasing acceptance of higher density, central city living will support more infill residential development than has occurred in the past. These units will be added at locations in close proximity to San Francisco jobs.
- Housing forecasts indicate that the most new housing development will occur in the east bay, followed by the south bay, the north bay, and San Francisco. By 2000, the east bay and the north bay are expected to have increased their shares of total housing within the region, while the percentages for the south bay and San Francisco will have declined./13/ Compared to the net addition of housing throughout the region during the 1970's, relatively more housing growth is expected during the 1980's in San Francisco, Alameda, Contra Costa, and Solano counties.
- Employment growth is expected throughout the region. More growth is expected outside of San Francisco as the City's share of total regional employment will decline. While San Francisco and Santa Clara County will continue to be major employment centers, the east bay is expected to increase its role as a place of employment. This trend is supported by job growth in eastern Contra Costa County, Solano County, Oakland/Berkeley, and southern Alameda County.

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- Within San Francisco, labor force participation is expected to increase. A major reason is that San Francisco's attraction as a place of residence is very strong among adults, many in non-family households and most of whom are employed. Labor force participation will increase as more existing residents are employed, as there is turnover of residents in the existing housing stock, and as new housing is built much of which is likely to be oriented toward singles, younger adults and generally smaller households with few or no children.
- Housing in San Francisco is expected to maintain its desirability and its current role vis-a-vis other housing throughout the region. The desirability of the City's older housing and of many of its neighborhoods is expected to support continuing upgrading of the housing stock. Prices and rents in San Francisco will remain relatively higher than those for housing in many other parts of the region.
- Within San Francisco, proportionally more of the growth of housing in the future is expected to occur in the eastern portions of the City. There are opportunities for larger scale, mixed use developments in the eastern areas, the City's Residence Element seeks to encourage development there, and there are redevelopment plans for housing in these areas./14/

The importance of the local and regional context can be viewed from two perspectives. One is in terms of the overall growth and distribution of labor and jobs in San Francisco and throughout the region. Many of the items listed above affect future total employment, population, housing, and labor force in each of the region's counties. The other perspective considers the extent to which those employed in the C-3 District would be drawn from the expanding labor pool in each county. This latter factor is referred to as the "propensity" to live in a particular county and work in the C-3 District.

For San Francisco, propensity to work in the C-3 District is likely to remain high. If anything, it could increase as there is turnover in the occupants of the existing housing stock and as the new housing added tends to be in areas of the City which are easily accessible to the downtown area. The propensity will also be influenced, however, by the large amount of employment to be added throughout the region, outside the C-3 District.

Within the east bay, there will be differences among counties. The large growth of employment forecast for eastern Contra Costa County is likely to increase the competition for labor among residents of eastern Contra Costa and eastern Alameda counties. The extension of BART service in these areas, however, could enhance San Francisco's attraction. Among the western portions of these counties, downtown San Francisco could increase its share of workers vis-a-vis other places of employment because of two factors. Accessibility to the C-3 District is relatively good and the area is well served by public transit. Further, there is a large amount of housing at costs below those in many parts of San Francisco. As older east bay neighborhoods continue to become more attractive relative to other housing and are upgraded, there is a large potential to house workers employed in San Francisco. Solano County also holds some potential to supply proportionally more workers. Large amounts of new housing are forecast for the Vallejo and Benicia areas of the county which have better access to San Francisco and to BART service.

Less change is expected in the north bay and south bay. The more outlying locations are likely to supply relatively fewer workers as employment grows in each of these areas. The closer-in locations are the more likely to supply proportionally more workers although the shares of employed residents who now work throughout San Francisco are already high for these areas. Changes in the public transportation options from the south bay could enhance work locations in the C-3 District relative to other employment locations although the nature of system improvements is still uncertain.

Effect of C-3 District Alternatives on Housing Development

Separate from their effect on the number of C-3 District workers, the Alternatives include policies which would have an effect on housing development in San Francisco. Some of the Alternatives provide incentives for developing housing and some include housing requirements as a condition of office development (see discussion in Section V.B).

The housing built because of changes in C-3 District policies could affect the residence patterns of C-3 District workers. If more housing is built in San Francisco more workers could live in the City instead of in other counties of the region. The effect on residence patterns largely depends on the amount of housing built that would not have been constructed without the proposed changes in C-3 District policies. It also depends on how the policies affect the types, price, or location of the housing built.

Housing Development Without Changes In C-3 District Policy

The net effects of C-3 District housing policy partly depend on overall citywide housing policies and forecasts. For example, C-3 District policies to encourage housing development are likely to have more net effect if less future housing construction is otherwise expected than if a large amount of development is already forecast. They are also likely to have more net effect on housing production if the new policies encourage different types of housing or housing at different locations than would have been developed otherwise./15/

Separate from the housing policies proposed and evaluated as a part of the C-3 District Alternatives, several different scenarios for future housing development in San Francisco are possible. Many regional and national factors beyond local control will affect the outcome.

Recognizing the uncertainties involved in forecasting future housing development in San Francisco, a "most likely" scenario and possible alternative scenarios were developed for the purposes of this study.

It is expected that the average addition of housing in San Francisco could range from 600 to 1,500 units per year over the next 20 years./16/ The most likely scenario is estimated at an average addition of 1,000 units per year or about 10,000 units during a 10-year period. These estimates represent the addition of housing units after accounting for demolitions and conversions.

Effect of Alternatives

Table V.D.3 provides a description of the possible net effects of C-3 District housing policies on the development of housing in San Francisco. The figures shown are only approximate, order of magnitude estimates. They are included to illustrate the differences between the Alternatives and to highlight the finding that not all of the units built because of C-3 District policies would be net additions to housing development in the City. Rather, some of them would substitute for units which would have been built anyway./17/

Alternative 1 does not propose any changes in housing policies so it would not affect the amount of housing built. Thus, the housing built under Alternative 1 is already included in the citywide forecast for housing in San Francisco as described above. The housing built under Alternative 1 would be built under any alternative which did not propose to change the C-3 District policies affecting housing development.

Alternatives 2 and 3 include incentives for housing development which would increase the number of units built in the C-3 District. Under Alternative 3 most of the additional units would be net additions for the City. Most would be built as part of office projects and the number would be small relative to the citywide forecast without changes in C-3 District policy. Under Alternative 2, the majority of the additional units would be net additions, although not as large a share as under Alternative 3. The larger number of units for Alternative 2 makes it likely that more of them would substitute for other housing development. Further, fewer of the units would be differentiated as a part of office projects in the heart of the downtown area and more of them would be in projects which would be more similar to and competitive with other new housing./18/

Alternative 4 includes housing incentives and a housing requirement for office development. This Alternative would result in the most housing being built, a relatively high percentage of which would represent a net

TABLE V.D.3: POTENTIAL NET EFFECT OF C-3 DISTRICT
ALTERNATIVES ON HOUSING DEVELOPMENT IN SAN
FRANCISCO, 1990-2000

	Alternative				
	1	2	3	4	5
Units Built In C-3 District (a)	300	2,000	800	3,500	1,000
Units Built In C-3 District Because of Changes In C-3 District Policy	-	1,700	500	3,200	700
Units Built Elsewhere In City Because of Changes In C-3 District Policy (b)	-	-	-	2,200	1,640
Total Units Built Because of Changes In C-3 District Policy	-	1,700	500	5,400	2,340
Estimated Net Addition of Housing In San Francisco Because Of C-3 District Policy, 1990-2000 (c)	-	1,000 About 60 percent	400 About 80 percent	4,000 About 75 percent(d)	1,700 About 70 percent(e)
Total Units Built In San Francisco Including Net Addition Because of C-3 District Policy, 1990-2000 (f)	10,000	11,000	10,400	14,000	11,700
Net Addition Because of C-3 District Policy As A Percentage of Total Housing Built In San Francisco, 1990-2000	-	9%	4%	29%	15%

TABLE V.D.3: POTENTIAL NET EFFECT OF C-3 DISTRICT.
ALTERNATIVES ON HOUSING DEVELOPMENT IN SAN
FRANCISCO, 1990-2000 (Continued)

NOTE: The numbers of units shown here are assumed to be additional housing after accounting for demolitions. The figures are only approximate, order of magnitude estimates. They were developed as reasonable estimates for illustrating the differences between Alternatives and to show that not all of the units built because of C-3 District policies would be net additions to total housing development in San Francisco.

- (a) See Table V.B.9. The explanation for the number and types of housing to be built under each Alternative is presented in Section V.B, Impacts on Land Use and Real Estate Development.
- (b) See Table G.11.
- (c) The percentage of housing built which is likely to be a net addition is a judgemental estimate based on the considerations described in the text. The percentages could be different if the C-3 District policies applied citywide. Only the Alternative 4 housing requirement is assumed to apply throughout the City.
- (d) About 70 percent of units built privately plus all units built with City housing fund.
- (e) About 50 percent of units built privately plus all units built with City housing fund.
- (f) These estimates assume an average of about 1,000 units per year added in San Francisco without the changes in housing policy proposed in the Alternatives and evaluated in this study. This figure could range from 300 to 2,000 units per year and is more likely to fall in the range of 600 to 1,500 units. (Also see Appendix I.)

SOURCE: Recht Hausrath & Associates

addition for the City overall. Although the large number of units relative to the original forecast suggests that a smaller share of them would be net additions, the policies of this Alternative would result in more units at prices and locations which would differ from the other housing built. The requirement that housing be built to serve office workers at all income levels, and the incentives which allow additional

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office space to cover housing costs would result in some of the units being sold or rented at prices below those of the units built without these policies. Further, the contributions made to a City housing fund would provide units at below-market prices/rents. The large number of units built as part of office projects in the more desirable locations of the downtown core would also contribute to providing units of the types which would not otherwise be built. Overall, under Alternative 4 policies, about 30 percent of the total housing added in the City would be contributed by changes in C-3 District housing policy.

Alternative 5 policies would also increase the amount of housing built in San Francisco. The strong incentive to contribute to the City's housing fund would result in the net addition of housing at below market prices/rents. These units would represent a large share of the housing built. The other incentives would result in fewer of the market units being built in the C-3 District and more of them being distributed throughout the City. Because of their similarities with other housing, relatively fewer would represent a net addition for the City. Overall, about 15 percent of the total housing added in the City would result from changes in C-3 District housing policy. Among the five Alternatives, this would be the second largest amount.

Future Residence Patterns

The forecasts of future residence patterns of C-3 District workers incorporate changes in the number and mix of types of C-3 District jobs, the forecasts of future labor force and housing in San Francisco and throughout the region, and changes in the "propensity" of individuals to live in each county and work in the C-3 District. As such the forecasts reflect the outcome of the growth of C-3 District employment within the context of changing demographic, housing market and employment factors throughout the region. The forecasting methodology is described in Appendix I.

The forecasts for San Francisco residents are described first, followed by the residence patterns for workers living in other counties of the region, and then by the distribution of San Francisco residents within the City.

Job Growth And Employment of San Francisco Residents

Over time, the number of San Francisco residents who work in the C-3 District is expected to increase. The percentage of C-3 District jobs held by City residents is expected to decline. The major reason is that future labor and housing growth in San Francisco will not increase in proportion to C-3 job growth and certainly not in proportion to labor and housing growth elsewhere in the Bay Area./19/

The number of San Francisco residents working in the C-3 District is expected to increase from about 154,000 in 1981, to 173,000 in 1990, to 189,000-193,000 in 2000, the range depending on the Alternative. As this occurs, the 1981 percentage of C-3 District jobs held by City residents of 56.8 percent would decline to 52.8 percent in 1990 and to 49.2-51.1 percent in 2000./20/ These forecasts are summarized in Table V.D.4.

While similar general trends apply to employment in the various business activities, there are some differences among them (see supplemental tables in Appendix I). The percentage of office jobs held by San Francisco residents is forecast to decline slightly more than average. Office jobs represent the largest number of jobs and the largest amount of growth. In general, workers will continue to be more willing to commute to C-3 District office jobs than to jobs in other business activities. Further, office employees will continue to include many individuals with preferences for housing in the other counties of the region. Relatively little change is forecast for the share of hotel and retail jobs held by City residents. These workers show a strong propensity to live in San Francisco; many are younger, are single, and/or are racial or ethnic minorities. In addition, fewer of these jobs are held by workers who commute longer distances to work. Changes in the residence patterns of workers in the other business activities would be more similar to the overall pattern.

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The effect of the Alternatives is shown by the differences in the forecasts for 2000. The differences reflect three factors. One is the mix of types of jobs, such as more or less office jobs relative to retail or hotel jobs. A second factor is the amount of job growth relative to the growth of labor and housing in the City and the rest of the region. For the same forecast of employed residents in San Francisco, a larger number of C-3 District jobs would mean a larger number of San Francisco residents working in the C-3 District but a smaller percentage of C-3 District jobs held by City residents. A third factor is the effect of the Alternatives on the production of housing in San Francisco. For the same growth of C-3 District jobs, more housing would mean a larger number of San Francisco residents working in the C-3 District and a larger percentage of C-3 District jobs held by City residents. The forecasts in Table V.D.4 reflect differences in all three of these factors.

Alternative 1 would have the most job growth and the least housing growth. It would have the largest number of San Francisco residents employed in the C-3 District. It would also have the lowest percentage of C-3 District jobs held by residents.

Alternative 2 would have less employment growth than Alternative 1 and more growth of employed labor in San Francisco because of more housing growth. Although the number of C-3 District jobs held by City residents would be less than under Alternative 1, there would be a larger percentage of C-3 District jobs held by City residents under Alternative 2. Similar relationships exist between Alternative 3 and Alternatives 1 and 2.

Alternatives 4 and 5 would have less C-3 District employment than the other Alternatives but they would result in more housing growth and thus a larger number of employed San Francisco residents. As a result of the combined effect of both job growth and housing growth, the percentage of C-3 District jobs held by City residents would be the highest for these Alternatives although the percentages would still reflect a decline over time. The differences between Alternatives 4 and

TABLE V.D.4: C-3 DISTRICT EMPLOYEES RESIDING IN SAN FRANCISCO BY ALTERNATIVE, 1990 and 2000

	2000 By Alternative							
	<u>1981</u>	<u>1984</u>	<u>1990</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Jobs In C-3 District	270,370							
	286,130	327,900	392,580	389,330	384,660	371,890	373,020	
- Number of C-3 District Jobs Held By San Francisco Residents	153,670	158,730	173,220	193,110	192,090	190,550	190,160	189,320
- Percent of C-3 District Jobs Held By San Francisco Residents	56.8%	55.5%	52.8%	49.2%	49.3%	49.5%	51.1%	50.8%
Employed San Francisco Residents	345,360	352,670	371,370	397,740	398,990	398,360	402,730	400,230
- Number Employed in C-3 District	153,670	158,730	173,220	193,110	192,090	190,550	190,160	189,320
- Percent Employed in C-3 District	44.5%	45.0%	46.6%	48.6%	48.1%	47.8%	47.2%	47.3%

NOTE: The forecasts of jobs in the C-3 District include permanent and construction employment (see Tables V.C.2 and V.C.6). The forecasts of employed San Francisco residents incorporate the growth of households and increases in the number of employed persons per household. The differences among Alternatives in employed residents in 2000 reflect the impact of C-3 District policies on the amount of housing built in San Francisco. The forecasts of the number of San Francisco residents working in the C-3 District incorporate changes in the number and mix of types of C-3 District jobs, the forecasts of future labor force and housing in San Francisco and throughout the region, and changes in the propensity of individuals to live in each county and work in the C-3 District. Appendix 1 provides more explanation of the methodology and provides the results of sensitivity analyses of alternate assumptions.

SOURCE: Recht Hausrath & Associates

V. Environmental Impacts

5 are in the amount of growth of jobs and housing. Alternative 4 has the least C-3 District job growth and the strongest policies for producing housing.

There is less difference in residence patterns (number of C-3 District workers who are City residents) among Alternatives than there would be if the Alternatives with the least employment did not also have the most housing development. Thus, the differences in residence patterns due solely to differences in the amount of C-3 District employment would be greater than shown in Table V.D.4.

Residents Working In C-3 District Compared To All Employed San Franciscans

Based on the number of San Francisco residents working in the C-3 District, it is possible to calculate the percentage that they represent of all employed San Franciscans in addition to calculating the percentage of C-3 District jobs held by residents (described above). These percentages both describe the same situation, but from different perspectives. The percentage of City residents who work in the C-3 District is a more direct measure of the role of jobs in the C-3 District in employing San Francisco's residents.

Over time, San Franciscans employed in the C-3 District will represent an increasing percentage of all employed residents. As shown in Table V.D.4, the total number of San Francisco residents who are employed is forecast to increase, the number who are employed in the C-3 District will increase, and the percentage that the latter represents of the former will also increase. This trend occurs under all Alternatives./21/

There are several reasons for this trend. The propensity to live and work in San Francisco will remain high. As new housing is built, it could be occupied by proportionally more C-3 District workers since they are likely to include many who have the preferences and resources for the types of new housing built. Also, a larger share of the new housing is expected to be built in the downtown area or in close

proximity to it. In addition, as turnover of the existing stock occurs, some who work in the C-3 District may replace others who did not work there.

The forecasts shown in Table V.D.4 indicate that the 1981 percentage of employed San Francisco residents working in the C-3 District, 44.5 percent, would increase to 46.6 percent by 1990 and to 47.2-48.6 percent by 2000, the range reflecting the differences among Alternatives.

The differences between Alternatives reflect differences in the number of C-3 District jobs and in the amount of housing built in the City. More housing with the same amount of employment would result in more San Francisco residents working in the C-3 District and fewer employees from other counties./22/ One reason is that the types, prices, and locations of housing built would appeal to households of C-3 District workers. Since the addition of housing would not result in an equal increase in residents who work in the C-3 District, however, the percentage of employed residents working in the C-3 District would be lower when more housing is built than if fewer units were added. Separate from differences in the housing built, the Alternatives with more C-3 District employment would tend to show a larger percentage of City residents who work in the C-3 District.

Under Alternative 1, residents employed in the C-3 District would represent the largest percentage of employed City residents, 48.6 percent in 2000. Alternative 1 has the most C-3 District employment and the least housing. Under Alternative 4, those employed in the C-3 District would represent the smallest percentage of City residents, 47.2 percent in 2000. Alternative 4 has the least C-3 District employment and provides the most housing in the City. Alternative 5 is most similar to Alternative 4, Alternative 2 is similar to Alternative 1, and Alternative 3 falls in the middle.

Future Residence Patterns Among Counties Outside of San Francisco

The number and percentage of C-3 District workers residing in counties outside of San Francisco are forecast to increase over time. The future residence patterns are summarized in Tables V.D.5, V.D.6, and V.D.7.

The most increase is expected for workers residing in the east bay. While 24.6 percent of C-3 District workers lived in the east bay in 1981, from 28.7 to 29.9 percent are expected to reside there in 2000. This increase primarily reflects the large growth of labor and housing forecast for the east bay. It is also influenced by some increase in the propensity for workers to live in the east bay and work in San Francisco. The largest increase in the number of east bay residents working in the C-3 District are forecast for Alameda and Contra Costa counties. The largest percentage growth is expected for Solano County although the total number of C-3 District workers living in Solano County remains relatively small.

The distribution of workers between the eastern and western portions of Alameda and Contra Costa counties is not expected to change substantially./23/ In Alameda County, there would be an increase in the relatively small share of C-3 District workers residing in the eastern part of the county (from 6.6 percent in 1981 to 7.7-8.0 percent in 2000). The large majority of C-3 District workers would still live in western Alameda County. There would be even less change in the split between eastern and western Contra Costa County, with only a very small increase in the percentage living in the western areas.

Among the north bay and the south bay, a larger increase is expected in the number of C-3 District workers residing in the south bay although the percentage increase would be larger for workers living in the north bay.

Most of the increase in the south bay would be workers living in San Mateo County, although some growth is expected among those residing in Santa Clara County as well. Within San Mateo County, the

TABLE V.D.5: RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS, PERCENTAGE DISTRIBUTIONS BY ALTERNATIVE, 1990 and 2000

County of Residence	1984	1990	2000 By Alternative				
			1	2	3	4	5
San Francisco	55.0%	52.8%	49.2%	49.3%	49.5%	51.1%	50.8%
East Bay	25.6%	27.5%	29.9%	29.8%	29.7%	28.7%	29.0%
Alameda	13.2	14.1	14.9	14.9	14.8	14.3	14.5
Contra Costa	11.2	11.8	12.9	12.8	12.8	12.4	12.5
Solano/Napa	1.2	1.6	2.1	2.1	2.1	2.0	2.0
South Bay	12.1%	12.4%	12.9%	12.9%	12.8%	12.5%	12.5%
San Mateo	11.5	11.7	12.1	12.1	12.0	11.7	11.8
Santa Clara	0.6	0.7	0.8	0.8	0.8	0.8	0.7
North Bay	6.8%	7.3%	8.0%	8.0%	8.0%	7.7%	7.7%
Marin	6.1	6.5	7.0	7.0	7.0	6.8	6.8
Sonoma	0.7	0.8	1.0	1.0	1.0	0.9	0.9
Other	few	few	few	few	few	few	few
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: These forecasts incorporate changes in the number and mix of types of C-3 District jobs, future labor force and housing in San Francisco and throughout the region, and changes in the propensity of individuals to live in each county and work in the C-3 District. Appendix 1 provides more explanation of the methodology and provides results of sensitivity analyses of alternate assumptions.

SOURCE: Recht Hausrath & Associates

TABLE V.D.6: RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS, TOTALS BY ALTERNATIVE, 1990 and 2000

County of Residence	1984	1990	2000 By Alternative				
			1	2	3	4	5
San Francisco	158,730	173,220	193,110	192,090	190,550	190,160	189,320
East Bay	73,170	90,150	117,230	115,950	114,290	106,920	108,050
Alameda	37,680	46,150	58,380	57,750	56,940	53,350	53,930
Contra Costa	31,940	38,700	50,540	49,970	49,260	46,240	46,690
Solano/Napa (a)	3,550	5,300	8,310	8,230	8,090	7,330	7,430
South Bay	34,590	40,600	50,800	50,180	49,170	46,170	46,690
San Mateo	32,760	38,210	47,540	47,000	46,030	43,370	43,860
Santa Clara	1,830	2,390	3,260	3,180	3,140	2,800	2,830
North Bay	19,500	23,730	31,140	30,800	30,360	28,400	28,710
Marin	17,590	21,180	27,390	27,110	26,730	25,140	25,420
Sonoma	1,910	2,550	3,750	3,690	3,630	3,260	3,290
Other	140	200	300	310	290	240	250
TOTAL (b)	286,130	327,900	392,580	389,330	384,660	371,890	373,020

NOTE: These forecasts incorporate changes in the number and mix of types of C-3 District jobs, future labor force and housing in San Francisco and throughout the region, and changes in the propensity of individuals to live in each county and work in the C-3 District. Appendix 1 provides more explanation of the methodology and provides results of sensitivity analyses of alternate assumptions.

(a) Most of these workers reside in Solano County.

(b) Includes permanent employment and annual average construction employment (see Tables V.C.2 and V.C.6).

SOURCE: Recht Hausrath & Associates

TABLE V.D.7: CHANGES IN RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS, 1984-1990 and 1990-2000 BY ALTERNATIVE

Increase in C-3 District Workers						
	1984-1990 No.	1990-2000 By Alternative				
		1 No.	2 No.	3 No.	4 No.	5 No.
San Francisco	14,490	19,890	18,870	17,330	16,940	16,100
East Bay	16,980	27,080	25,800	24,140	16,770	17,900
South Bay	6,010	10,200	9,580	8,570	5,570	6,090
North Bay	4,230	7,410	7,070	6,630	4,670	4,980

	%	%	%	%	%	%
San Francisco	9.1	11.5	10.9	10.0	9.8	9.3
East Bay	23.2	30.0	28.6	26.8	18.6	19.9
South Bay	17.4	25.1	23.6	21.1	13.7	15.0
North Bay	21.7	31.2	29.8	27.9	19.7	21.0

SOURCE: Recht Hausrath & Associates

distribution of workers between the eastern and western areas is expected to change only slightly, with some increase in the percentage living in the western portions relative to the eastern areas which would continue to house the majority of the C-3 District workers living in the county./23/

Overall, the percentage of C-3 District workers residing in the south bay is forecast to increase from 12 percent in 1981 to 12.4-12.9 percent in 2000. This increase primarily reflects growth of the labor force in these counties. While there could be some increase in the propensity to work in the C-3 District among those living in the northern parts of

San Mateo County, much of this potential change is likely to be offset by employment growth in the south bay and in other parts of San Francisco outside the C-3 District.

In the north bay, most of the increase in residents working in the C-3 District is expected for Marin County, although the number residing in Sonoma County is also forecast to grow. Most of the growth of north bay residents working in the C-3 District would occur because of labor force and housing growth in these counties. A small increase in the propensity to work in the C-3 District is also expected. Overall, the 1981 percentage of 6.6 percent of C-3 District jobs held by north bay residents is expected to increase to 7.7-8.0 percent in 2000.

Overall, there is not a large difference among Alternatives in the percentage distribution of C-3 District workers throughout the region. There are differences in the number of C-3 District workers residing in each county. The effect of the Alternatives is seen best by comparison of the changes in C-3 District workers residing in each county over the 1990 to 2000 period as shown in Table V.D.7. The increase in C-3 District workers living in each part of the region outside of San Francisco is largest when C-3 District employment growth is largest and San Francisco housing growth is smallest. Thus, there would be the most growth of C-3 District workers in the east bay, south bay, and north bay under Alternative 1 and the lowest growth under Alternative 4. Alternative 5 is most similar to Alternative 4 and Alternative 2 is most similar to Alternative 1. Alternative 3 falls in between.

It should be understood that all of the increase in C-3 District workers forecast to reside in each county throughout the region does not reflect a net addition of population in the region or in each county. The growth of population to provide labor for job growth would be less than the increase in employed labor primarily because labor force participation within the existing population is expected to increase. Further, the differences among Alternatives in the number of C-3 District workers residing in each county do not necessarily reflect

differences in the number of employed persons residing in each place. The outcome depends on whether the differences in C-3 District jobs reflect shifts in employment among locations within the region. For example, if less employment in the C-3 District resulted in more employment elsewhere in San Francisco, there could be little difference in the number of employed residents in the City since a smaller number would be employed in the C-3 District but a larger number would be employed elsewhere in the City. Thus, the difference in residents employed in the C-3 District could be greater than the difference in total employed residents in San Francisco.

Thus, the differences among Alternatives, shown in Table V.D.7 do not represent differences in the region's population. Although there may be some difference, it would be less than shown by these numbers of employed residents.

Residence Patterns Within San Francisco

Over time, the residence patterns of C-3 District workers residing in San Francisco will change so that larger percentages of these workers will reside in the northeastern and southeastern portions of the City (see Table V.D.8). The percentages of C-3 District workers residing in the southwestern and northwestern parts of the City will decline over time./24/ The major reason for this shift is the location of future housing development which will result in more of the new units being located in the eastern parts of the City. Thus it is expected that the City's total housing stock in the future will include a larger percentage of units in the eastern areas.

Growth in the number of C-3 District workers is expected in all of the four quadrants of the City (See Table V.D.9). The largest amounts of growth will occur in the southwest and the northeast. The largest percentage increases will occur in the northeast and southeast.

The Alternatives would affect residence patterns within the City, primarily through their effect on housing development./25/ The

TABLE V.D.0: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES WHO ARE CITY RESIDENTS, 1990 and 2000

City Study Areas (a)	2000 By Alternative						
	1984 No.	1990 No.	1 No.	2 No.	3 No.	4 No.	5 No.
Southeast	22,410	24,770	28,740	28,560	28,380	27,910	28,280
Southwest	59,910	65,710	72,170	71,220	71,100	69,950	70,430
Northwest	48,300	51,470	56,070	55,210	55,000	54,870	54,690
Northeast	21,980	25,000	29,620	30,670	29,880	31,620	30,160
Total	152,600	166,950	186,600	185,660	184,360	184,350	183,560
Building Maintenance/ Security and Construc- tion Workers Not Allo- cated Within the City (b)	6,130	6,270	6,510	6,430	6,190	5,810	5,760
Total	158,730	173,220	193,110	192,090	190,550	190,160	189,320
<hr/>							
	%	%	%	%	%	%	%
Southeast	14.7	14.8	15.4	15.4	15.4	15.1	15.4
Southwest	39.3	39.4	38.7	38.4	38.6	37.9	38.4
Northwest	31.6	30.8	30.0	29.7	29.8	29.8	29.8
Northeast	14.4	15.0	15.9	16.5	16.2	17.2	16.4
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

(a) See Figure 11.C.2 for a map of the City Study Areas.

(b) Building maintenance/security and construction workers are not allocated to City Study Areas because they were not included in the Downtown EIR Survey. Information about their residence patterns is not available. The estimate of the number who live in the City assumes that the average percentage of all other C-3 District workers residing in the City applies to workers in these activities. If they were distributed within San Francisco similarly to all other C-3 District workers living in the City the percentages shown in this table would apply.

SOURCE: Recht Hausrath & Associates

TABLE V.D.9: CHANGES IN RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT
EMPLOYEES WHO ARE CITY RESIDENTS, 1984-1990 and 1990-2000

City Study Areas (a)	1984 - 1990	1990-2000 By Alternative				
	No.	1 No.	2 No.	3 No.	4 No.	5 No.
Southeast	2,360	3,970	3,790	3,610	3,140	3,510
Southwest	5,800	6,460	5,510	5,390	4,240	4,720
Northwest	3,170	4,600	3,740	3,530	3,400	3,220
Northeast	3,020	4,620	5,670	4,880	6,620	5,160
Total	14,350	19,650	18,710	17,410	17,400	16,610
Building Maintenance/ Security and Construc- tion Workers Not Allo- cated Within the City	140	240	160	-80	-460	-510
Total	14,490	19,890	18,870	17,330	16,940	16,100

Percentage Change (b)		%	%	%	%	%
Southeast	10.5	16.0	15.3	14.6	12.7	14.2
Southwest	9.7	9.8	8.4	8.2	6.5	7.2
Northwest	6.6	8.9	7.3	6.9	6.6	6.3
Northeast	13.7	18.5	22.7	19.5	26.5	20.6

(a) See Figure 11.C.2 for a map of the City Study Areas.

(b) These percentages do not include the building maintenance/security and construction workers living in the City but not allocated to City Study Areas. The percentage changes for 1984-1990 and Alternatives 1 and 2 might be slightly higher if they were included since there is some growth of employment in these activities. The percentages for Alternatives 3, 4, and 5 might be slightly lower than shown since a small decline is expected in these two types of employment.

SOURCE: Recht Hausrath & Associates

incentives for housing included in Alternatives 2 and 4 would result in the most housing developed in the C-3 District which is in the northeast quadrant. The housing requirements of Alternatives 4 and 5 would also result in more housing developed in the northeast, either in the C-3 District or in nearby areas. Thus, these three Alternatives would each result in proportionally more C-3 District workers living in the northeastern part of the City. Among these Alternatives, the most growth of C-3 District workers residing in the northeast would occur under Alternative 4, followed by Alternative 2, and then Alternative 5. Although Alternative 1 would have the most C-3 District employment growth, the growth of C-3 District workers residing in the northeast would be the least under Alternative 1.

The Alternatives with proportionally more C-3 District workers living in the northeast would have relatively fewer workers living in the other parts of the City. Except for these differences in the northeast, the distribution of workers among the other parts of the City would be relatively similar for all the Alternatives.

IMPLICATIONS FOR HOUSING IN SAN FRANCISCO

Summary of Changes In Residence Patterns As Related To San Francisco Housing

The forecasts presented in the previous subsection indicate that the number of San Francisco residents working in the C-3 District would increase under all Alternatives. The percentage that they represent of total C-3 District jobs would decline. The percentage that they represent of total employed residents of the City would increase.

Table V.D.10 presents a summary of the net increases in C-3 District employment and in the number of San Francisco residents working in the C-3 District. These increases are the net result of the many changes which occur over time as individuals become newly employed in the C-3 District and as C-3 District workers change their housing./26/

TABLE V.D.10: SUMMARY OF CHANGES IN SAN FRANCISCO RESIDENTS WORKING IN THE C-3 DISTRICT
BY ALTERNATIVE, 1981-1990, 1990-2000

	Change 1981-1990	Change 1990-2000 By Alternative				
		1	2	3	4	5
Net Increase In C-3 District Jobs	57,530	64,680	61,430	56,760	43,990	45,120
Net Increase In San Francisco Residents Working in C-3 District	19,550	19,980	18,870	17,300	16,940	16,100
Net Increase In Residents Employed in C-3 District As A Percentage of the Net Increase In C-3 District Jobs	34.0%	30.7%	30.7%	30.5%	38.5%	35.7%

NOTE: These changes are calculated from the forecasts in Table V.D.4.

SOURCE: Recht Hausrath & Associates

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The table also presents a ratio of the change in employed residents to the change in jobs. For the period 1981 to 1990, this ratio indicates that the increase in employed residents would represent about 34 percent of the increase in jobs. From 1990 to 2000, similar ratios would range from 30.5 percent to 38.5 percent depending on the Alternative.

These ratios provide a measure of the change which occurs in overall residence patterns over time. For example, Table V.D.4 indicates that the percentage of C-3 District jobs held by residents would be 52.8 percent in 1990 and 49.2 percent for Alternative 1 in 2000. The decline in this percentage over time is described by the ratio of the change in employed residents to the change in jobs of 30.7 percent over the 1990 to 2000 period for Alternative 1 (as shown in Table V.D.10)./27/

The ratio of the change in employed residents to the change in jobs provides a means of relating job growth to changes in the population in San Francisco. This ratio is useful for considering housing impacts.

The net increase in San Franciscans working in the C-3 District does not necessarily represent a similar net increase in the number of residents in the City. If it did, the ratios identified in Table V.D.10 could be used to estimate the increase in San Francisco residents based on an increase in jobs. However, it is more likely that the net increase in San Francisco residents is less than the net increase in residents employed in the C-3 District.

The net increase in City residents working in the C-3 District could represent net increases in three groups of workers: an increase in the number of residents in the City (more people move in than move out), an increase in the number of residents who work (those joining the labor force exceed those who retire or stop working), and an increase in the number of residents who work in the C-3 District (more residents who had previously worked outside the C-3 District take jobs in downtown and fewer residents leave C-3 jobs).

It is expected that over time, some San Franciscans working outside the C-3 District would shift to jobs in the C-3 District (third group mentioned above). However, it is difficult to conclude whether they would represent a net increase after accounting for those who change their employment to jobs outside the C-3 District. It is assumed that this type of change would account for only a small share of the growth of City residents working in the C-3 District.

Most of the increase is expected to occur because of the other two groups listed above. As described in Appendix I and earlier in this section, a net increase in labor force participation is expected in San Francisco's population over the next 20 years./28/ To the extent that the number of workers increased from within the population housed in the existing housing stock, the net increase in San Francisco's population would be less than the net increase in residents working in the C-3 District. It is also expected that there will be a net increase in households and housing units in San Francisco over the next 20 years. (These forecasts are also presented in Appendix I.) This increase in households would mean an increase in employed residents as well.

The forecasts of the growth of employed residents in San Francisco indicate that under Alternative 1, about 40 percent of the increase in employed residents from 1980 to 2000 would occur because of housing growth and the net addition of households in the City and about 60 percent because of increases in labor force participation./29/ If these same percentages applied to the increase in residents working in the C-3 District, then about 60 percent would represent residents in the existing housing stock and about 40 percent would represent a net addition of employed residents in the City. Thus, the ratio of 30.7 percent (from Table V.D.10 for Alternative 1) could be divided into 12.3 percent (40 percent of 30.7) and 18.4 percent (60 percent of 30.7). The former percentage would indicate the increase in San Francisco residents working in the C-3 District who would also be new residents in the City as a percentage of the increase in C-3 District jobs.

Two conclusions follow from the forecasts described above. One is that a large amount of growth in the City's labor force can occur without adding housing. The increase in workers due to increased labor force participation is likely to be larger than the increase due to a net addition of households. The second is that much, if not most, of the increase in employed residents in the City could occur without C-3 District job growth. It will occur because of the demographic characteristics of the existing and prospective future residents of the City (age, labor force status, lifestyle, and household type characteristics).

Over the long term, the increase in labor force participation could decline and eventually level off. Further, the forecasts of increasing labor force participation presented here are only estimates. Thus, the percentage of C-3 District job growth represented by new residents of the City could range from about 12 to 30 percent for Alternative 1.

There would be differences in these percentages among the Alternatives. The differences depend on the amount of job growth relative to housing and household growth. The more housing growth there is, the larger would be the net increase in residents in the City relative to the growth of labor through increases in labor force participation.

Since Alternative 4 would have the most housing development, a larger percentage of the future growth of employed residents, 46 percent, would occur because of a net increase in persons living in the City and 54 percent would come from increased labor force participation. If these percentages are applied to the ratio in Table V.D.10 then about 18 percent of job growth would represent net new residents in the City and 21 percent would represent residents who became newly employed downtown. The range developed between this percentage and the ratio in the table is from 18 to 39 percent for Alternative 4.

Similar ranges for the other Alternatives would be the following: Alternative 2, 13 to 31 percent; Alternative 3 also 13 to 31 percent, and Alternative 5, 16 to 36 percent.

Comparison among Alternatives indicates that the growth of City residents would represent a larger percentage of job growth under Alternatives 4 and 5 than under Alternatives 1, 2, and 3. The main difference is that increases in housing supply are larger relative to job growth for Alternatives 4 and 5. However, the amount of growth in City residents would be larger for Alternatives 1, 2, and 3 because of larger job growth and total employment.

Changes Over Time And Differences Among Alternatives As Related To The Assessment of Housing Impacts

It is important to understand the differences between the two perspectives of changes over time and of differences among alternatives during a similar period of time. As explained earlier in this impact section, the forecasts of future residence patterns of C-3 District workers were prepared considering the employment and housing growth of the C-3 District Alternatives within the context of trends in demographics, housing, and labor force throughout the region. Thus, the changes over time identified by the forecasts of future residence patterns do not solely reflect the influence of C-3 District employment growth.

For example, it is accurate to say that job growth in the C-3 District would increase the number of existing City residents newly employed in the C-3 District and the number of C-3 District workers who move into San Francisco over time. Further, the more job growth there is, the larger would be the increase in each of these groups. However, the actual amount of increase is determined by other factors in addition to C-3 District employment growth. Thus, it is not accurate to conclude that the changes identified by the forecasts are solely the result of changes in employment. C-3 District employment and employment growth play a role but they are not the only important factors. Other factors include housing growth, changes in labor force participation, and changes in demographic characteristics and lifestyles as affecting preferences for San Francisco housing. Differences in these other factors could produce a different future situation even if employment growth were the same.

V. Environmental Impacts

The differences between Alternatives for a similar time period provide a better basis for describing the effects (impacts) of only one factor, such as employment. As long as the other factors besides C-3 District employment are assumed to be the same, then the differences in the forecasts for Alternatives would reflect the effects of C-3 District employment. It is from this perspective that the impacts of employment growth on the City's housing market can be identified.

However, the Alternatives evaluated in this study differ because of two factors: employment and housing. Thus, the differences between them are affected by both factors and do not solely reflect the effects of employment growth. Further, as they are defined, the Alternatives with lower employment growth have the most housing development and the Alternative with the most job growth has the least housing. Thus, there are greater differences in housing impacts among Alternatives than would occur from only the differences in employment./30/

Implications For Housing In San Francisco

Housing Market Context For Considering Housing Impacts

While it is not the purpose of this study to address the broader housing problems, it is relevant to understand that the current housing situation arises out of a local, regional, and national context. While downtown employment and employment growth play a role, the housing problems of San Francisco residents are not solely or mainly due to downtown growth.

Since the early 1970's, housing prices and rents have increased dramatically in San Francisco and throughout the Bay Area. Demand for housing has been strong and supply has not kept pace with demand in many areas. There are many factors which contributed to this market situation. These include changing lifestyles, changing demographic and household characteristics, rising household incomes, employment growth, the attractiveness of the Bay Area as a place to live, the availability and cost of financing, the attractiveness of real

estate as an investment, no-growth policies in some communities, the increasing scarcity of land in other communities, and many others.

In the past few years there have been major changes in the financing of housing. Throughout the 1960's and 1970's housing benefitted from the ability of savings and loan institutions to attract inexpensive deposits. As alternative savings vehicles became available near the end of the 1970's, monies were withdrawn from savings deposits. Financing became available only at a very high rate of interest. As long as housing appreciated as fast as the interest rate, as it did in the 1970's, the true cost of money to housing consumers was zero. In the early 1980's, the situation swung the other way with interest rates at 16+ percent and insignificant appreciation in housing. The true cost of money for housing became extremely high.

As a result of all of these factors, many households now allocate a greater share of their financial resources to housing, and the housing choices available at various prices and rents have changed. Many people cannot now afford the housing they prefer and many are not housed at the standard that, until recently, they had come to expect. Given this housing market context, it is not surprising that there is concern for the potential housing impacts of future employment growth.

The housing impacts of concern here are those that would arise from future differences in the City's housing market because of the choice of an Alternative for the C-3 District. Differences could occur because employment growth results in increased competition for the City's stock of housing and rents and prices would be higher than they otherwise would have been. Differences could also occur because new housing development reduces the competition for the City's housing stock and rents and prices would be lower than they otherwise would have been. In other words, housing impacts arise from the extent to which the C-3 District Alternatives make a difference in the City's housing market situation. Housing problems which exist with or without C-3 District growth are not the impacts of the Alternatives.

Effects of Job Growth And Housing Growth On Competition For San Francisco Housing And On Prices And Rents/31/

The C-3 District Alternatives affect both employment growth and housing supply. Each of these factors has a different effect on the competition for housing in San Francisco.

In general, employment growth would mean an increase in the number of San Francisco residents working in the C-3 District. In turn, this would mean an increase in the number of existing City residents newly employed in the C-3 District and an increase in the number of C-3 District workers who move into San Francisco. It is likely that the more job growth there is, the larger would be the increase in each of these groups. For the same supply of housing, more C-3 District workers would mean more competition for the City's housing stock.

Increased competition for existing housing could mean upward pressure on prices and rents. The amount of increase in prices and rents depends on the extent of imbalance between supply and demand and on the ability and willingness of housing consumers to pay higher prices and rents. It also depends on whether the housing market automatically responds with new development to increase the supply. Generally, employment growth would mean that housing prices are likely to be higher than they otherwise would be.

For a given amount of job growth, policies to increase the housing supply could affect both the price of housing and the number of households who move into the City. The construction of new housing would tend to offset the increased competition for housing resulting from job growth. However, it would also induce more households to live in San Francisco. More housing construction would provide more options for those desiring to live in the City. To the extent that supplying new housing keeps prices lower than they otherwise would have been, more households would move into the City over the number who would have moved in otherwise.

Although the number of households moving into San Francisco increases, additions to the housing stock are likely to result in less upward pressure on prices than would exist if housing development had not occurred. In other words, increasing the housing stock keeps housing prices lower than they otherwise would be. The extent to which housing prices would be lower depends on the amount of supply added as well as the types, locations, and prices and rents of those units.

Impacts Of Alternatives On Competition For San Francisco Housing And On Prices And Rents

The extent to which the Alternatives would affect the City's housing market depends on the combined effects of the employment growth and housing growth incorporated in each. The impacts of the Alternatives are measured relative to each other.

Alternative 1 would support the most employment growth. Further, it is the only Alternative which does not include new measures to increase the supply of housing. Thus, this Alternative would result in the most competition for housing in San Francisco and the most upward pressure on housing prices and rents.

By comparison, Alternative 4 would result in the most additional housing and in the smallest amount of C-3 District employment growth. Therefore, this Alternative would result in the least competition for San Francisco housing and the least upward pressure on housing prices and rents.

Alternative 5 would be most similar to Alternative 4. Alternative 5 would support slightly more employment growth than Alternative 4 and it would not result in as large of an addition of housing. Thus, among the Alternatives, Alternative 5 would result in relatively less competition for San Francisco housing and less upward pressure on prices and rents.

V. Environmental Impacts

Alternative 3 would rank third among the five Alternatives from the perspective of housing market impacts. The main reason is that the growth of C-3 District jobs is less than the growth for Alternatives 1 and 2 and more than the job growth for Alternatives 4 and 5. Alternative 3 housing policies would result in a small addition of housing. Thus, Alternative 3 would result in less competition for housing than Alternatives 1 and 2 and more competition than Alternatives 4 and 5.

Alternative 2 would be most similar to Alternative 3. Among the Alternatives, it would rank second after Alternative 1 in terms of housing impacts. While Alternative 2 supports employment growth that is very similar to Alternative 1, it would result in the addition of more housing. The additional housing would offset some of the increased competition for housing as a result of job growth.

It is not possible to quantify the effects of the Alternatives on the prices and rents of San Francisco housing. While the C-3 District Alternatives would have some impact, they will be only one of the important factors which determines future price levels. As described at the beginning of the discussion of housing markets in this section, there are several other important demand and supply factors affecting the price of housing. While employment plays an important role it is not the only or the most important factor.

Employment elsewhere in San Francisco is also a factor. If those Alternatives with lower employment in the C-3 District (and less housing impact from C-3 District workers) would result in more employment growth elsewhere in the City (and housing impact from those workers) then there may be less difference in housing impact between the C-3 District Alternatives when they are viewed from the citywide perspective. Further, if these types of shifts occurred under some Alternatives but not under others, then the differences between Alternatives could be greater than discussed here.

Implications Of Higher Housing Prices And Rents

To the extent that employment growth in the C-3 District contributed to higher housing prices and rents than would otherwise exist, there are several potential implications. The extent to which these implications occur under each of the C-3 District Alternatives would depend on the net effect of the employment and housing policies incorporated in each. It also would depend on the other factors affecting future housing price levels. The implications described here are considered from the perspective of what could occur if greater competition for San Francisco housing resulted in higher prices and rents.

The implications of higher housing prices depend on how extensively housing prices and rents throughout the housing market would be affected. As explained in detail in Appendix I, increased competition for existing housing could result in a series of market interactions whereby consumers desiring the types of housing in greater demand substitute other housing which, in turn, increases upward pressure on prices for that other housing. These interactions could occur fairly extensively throughout the City's housing market affecting units of different types and in different price ranges. They could also affect some types and prices of housing more than others. The outcome depends on the extent that consumers pay more for San Francisco housing of various types, that greater competition results in some consumers choosing housing outside of San Francisco, and on the extent to which greater competition results in the production of more housing.

Generally, in situations where there is increased competition for housing, some households end up paying more for the same housing, some accept a substitute for their preferred housing, and others may not be affected. Often, the households who are affected most by higher prices and rents and who make the most sacrifices are those with fewer resources and less ability to compete for their preferred housing.^{/32/} These households would include those with and without C-3 District workers. They would also include existing San Francisco residents and individuals who would consider a move into San Francisco at some future time.

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Thus, higher prices for San Francisco housing would mean that some people may decide not to move into San Francisco, current residents who rent could find it more difficult to buy a home, and some existing residents may move out of the City if they find a more acceptable housing product elsewhere. Others would continue to live in San Francisco and to pay higher prices for City housing. If they did not, prices would be lower.

Over time, households would move into the City as additional housing is developed and as existing City residents move out. People change their housing for a variety of reasons. It is possible that in situations with higher housing prices, household would decide to move out of San Francisco or out of certain neighborhoods in the City, primarily because of the higher prices. The C-3 District Alternatives could contribute to this process to the extent that prices are higher than they otherwise would have been. However, the impact of the Alternatives would be limited to households who move primarily because of price (and not other factors) and because of the extra amount by which prices are higher because of C-3 District employment (which may be less than the total increment of price increases experienced).

Effects of this type often arise most in neighborhoods with housing that is priced below average levels but which is not the lowest priced housing in the City. In a competitive housing market, consumers priced out of higher priced neighborhoods are often attracted to areas such as these where housing can be secured initially at lower than average costs and investments made to upgrade the units. As this occurs, the desirability of the area improves and prices and rents rise. Often residents who had previously chosen the area because of its relatively lower prices and rents could be "priced out" in the upgrading process. While a more competitive housing market contributes to this phenomenon, there are other important factors. In recent years, increasing preferences for central city neighborhoods and older housing, a greater number of the types of households with these preferences, and increasing incomes have been contributing factors.

Summary

A summary comparison of the alternatives in terms of the issues discussed in this section is presented in Table V.D.11.

TABLE V.D.11: SUMMARY COMPARISON OF ALTERNATIVES

	Alternatives				
	1	2	3	4	5
<u>Changes In Residence Patterns Of C-3 District Workers As Related To How San Francisco Residents Share In The Growth Of Downtown Jobs</u>					
Growth of Jobs In C-3 District	A	B	C	E	D
Addition of Housing In San Francisco	E	C	D	A	B
San Francisco Residents Employed In C-3 District	A	B	C	E	D
Non-San Francisco Residents Employed In C-3 District	A	B	C	E	D
Existing San Francisco Residents Newly Employed In C-3 District	A	B	C	D	E
Increase In C-3 District Workers Who Move Into San Francisco	A	B	C	D	E
Percent of C-3 District Jobs Held By San Francisco Residents	E	D	C	A	B
Percent of Employed San Francisco Residents Working In C-3 District	A	B	C	E	D
<hr/>					
Key: A = Largest Number or Percentage E = Smallest Number or Percentage					
<u>From Perspective Of San Francisco's Housing Market</u>					
Increased Competition For Housing Stock	A	B	C	E	D
Upward Pressure On Housing Prices and Rents	A	B	C	E	D
<hr/>					
Key: A = Most Effect Within Context Of Other Future Housing Market Factors E = Least Effect Within Context Of Other Future Housing Market Factors					
SOURCE: Recht Hausrath & Associates					

NOTES - Residence Patterns and Housing for C-3 District Workers

- /1/ See setting descriptions in employment and housing sections, particularly Tables IV.C.7, IV.C.8, IV.C.9, and IV.D.2.
- /2/ Although male residents still have higher labor force participation than women, the increase in participation has occurred solely among women residents. Since 1960, the share of the male population that is in the labor force has declined.
- /3/ It is important to understand the difference between the two percentages shown at the bottom of Table V.D.1 and discussed in this paragraph and in the previous paragraph of the text. They describe the same situation from two different perspectives. In each case, the number of City residents working in San Francisco is compared to another, larger group. In the first percentage shown in the table, the number of City residents working in San Francisco (293,166 in 1980) is divided by the total number of San Franciscans who work (342,484 in 1980). This produces the figure 85.6 percent for 1980 and indicates that the majority of employed San Franciscans work in the City. The second percentage shown is derived by dividing the number of City residents working in San Francisco (293,166 in 1980) by the total number of jobs in the City (578,600). This produces the figure, 50.7 percent and indicates that about half of the City's jobs are held by residents. Since the number of jobs (578,600) exceeds the number of employed City residents (342,484), this second percentage must be lower than the first. The distinction between these two perspectives is used throughout this section. Also see Table IV.D.9 and the associated text in the Housing Setting, Section IV.D.
- /4/ There are indications that the percentage of employed San Franciscans who hold downtown office jobs has increased. Analysis done for the SPUR study in 1974 estimated that office workers in the downtown area who lived in San Francisco represented 22 percent of employed San Francisco residents (see page 153, San Francisco Planning and Urban Research Association, Impact of Intensive High Rise Development On San Francisco, Final Report June 1975). This study estimates that in 1981, primary office workers in the C-3 District who live in San Francisco represent about 24 percent of employed City residents and that primary and secondary office workers combined represent about 31 percent of employed residents. While the two studies are not entirely comparable, this provides an indication of the trend.
- /5/ Relevant to trends in residence patterns, Table V.D.2 presents two types of information. First, it shows how the average, overall pattern is changing. For example, it shows that while 89.1 percent of employed City residents worked in San Francisco in 1970, that percentage declined to 85.6 percent by 1980. Second, the table describes the change which is occurring in "marginal" terms. For example, it shows that for the 1970-1980 period, the increase in residents working in San Francisco as a

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

percent of the overall increase in employed City residents was 39 percent. Since the 39 percent is lower than the 89.1 percent average in 1970, the overall average declined to 85.6 percent by 1980. Since the total number of jobs and of employed residents is large relative to the net changes which occur over time, the percentages of change "at the margin" can be very different from the average pattern. The average pattern changes very slowly over time.

- /6/ The Downtown EIR Employee Survey results indicate that the group of workers newly employed always has different average characteristics from all workers in the C-3 District. The reason is that turnover is higher among certain types of jobs and among certain types of employees. For example, professional workers change jobs more often than managers, and younger workers change jobs more often than older workers. Over time, overall residence patterns change because of two reasons: those who are newly employed because of turnover are different from those whom they replace; and/or those who are newly employed because of job growth are different from all other workers. One cannot simply compare the characteristics of those newly employed in the last few years with those of all employees to identify if net changes in the overall pattern are occurring. These data do not identify who left, they only identify who was recently employed. Further, it is not possible to separate those newly employed because of turnover from those newly employed because of job growth. The individuals cannot be separately identified.

It is possible to get indications of changes by making comparisons among groups with similar job and demographic characteristics (such as by comparing the residence patterns of younger, clerical workers in office jobs who were newly employed in the past three years with the residence patterns of those with similar characteristics who had worked downtown for a longer time). Analysis of the results of the Downtown EIR Employee Survey indicated, however, that it is difficult to control for all of the factors which affect residence patterns. Because of all the changes which are occurring, data about those newly employed are not substitutes for information about the actual changes in overall patterns over time. This information would only be available from similar surveys done at different times.

- /7/ Analysis of the residence patterns of those who moved recently to provide an indication of changing overall residence patterns has many of the same problems described in note 6 for analysis of the newly employed. The main problem is that certain workers move more often than other workers. For example, renters definitely move more often than owners, and, within each tenure group, stability seems to increase with age and income. Further, a survey of those who moved recently does not indicate if they differ from all those who had moved in a prior period since some of those individuals who had moved in the past would no longer work in the City.

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

Analysis of the C-3 District Employee Survey data, however, provided a useful indication of trends when tabulations were done separately by tenure and by other demographic characteristics. It was found that the residence patterns of those who had recently moved provided a better indication of changing residence patterns than did information for those newly employed.

- /8/ This is not to say that the net growth of jobs and employees does not affect the changes in residence patterns of all those who would still work in the City if there was no job growth. Each group potentially influences the residence patterns of the other. It is saying however, that the number of changes among the existing jobs and existing workers is much larger than the changes which occur because of job growth.
- /9/ See Employment Setting, Section IV.C, page IV.C.19 and note 10.
- /10/ In addition to the number of persons newly employed in the C-3 District each year, the survey also identified that about 27 percent of the workforce changes jobs each year. If 27 percent changes jobs and 20 percent are newly employed downtown, then about seven percent of the workforce change jobs within the C-3 District each year. This indicates that about 25 percent of those newly hired each year had previously worked for another employer in the C-3 District while about 75 percent were newly employed in the downtown area.
- /11/ The examples given here and in the previous paragraph are for the total City rather than only the C-3 District because employment growth figures are not available for the C-3 District from 1970 to 1980. Since the amount of employment growth in the C-3 District was probably larger relative to total employment in the C-3 District than was the case for the City overall, the changes due to growth would represent a larger percentage of all the changes which occurred in the C-3 District. However, the changes due to growth would still be less than the changes that would have occurred anyway. For example, if it assumed that about 60 percent of the City's job growth occurred in the C-3 District, then employment growth in the C-3 District would have included about 50,000 jobs. If 20 percent of the workforce was newly employed each year, then about 49,100 people were newly employed in the C-3 District including the 5,000 newly employed because of job growth. This would indicate that about 10 percent of those newly employed in the C-3 District each year were newly employed because of job growth. This 10 percent estimate is higher than the 8 percent figure for the total City. Similarly for those who changed their place of residence each year, about 8 percent could have been those who moved because they were newly employed because of job growth in the C-3 District. This

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

8 percent figure is higher than the 6 percent estimate for the total City.

/12/ The Downtown EIR Employee Survey indicates that of those newly employed in the C-3 District who were not new to the region, about 30 to 40 percent had moved during the year that they were newly employed. The remaining 60 to 70 percent did not move during that time.

/13/ The housing information analyzed included: 1970 and 1980 Census data, annual building permit data through 1981, and housing forecasts prepared by the Association of Bay Area Governments (ABAG). Information was analyzed for each county within the region. A summary of relevant data is presented in Appendix I.

The east bay includes Alameda, Contra Costa, Solano, and Napa counties; the south bay includes San Mateo and Santa Clara counties; and the north bay includes Marin and Sonoma counties.

/14/ For example, the City's Proposed Residence Element indicates the potential for about 22,300 new housing units in mixed residential-commercial use areas including the Van Ness Corridor, north of Market, Downtown, south of Market, Rincon Hill, and Mission Bay. It indicates potential for another 4,500 units in two redevelopment areas, Yerba Buena Center and Rincon Point-South Beach. Overall, about one-half of the total housing opportunities identified in the Proposed Residence Element are in the eastern half of the City. (See pg. A1.27 in the Draft Environmental Impact Report, Residence Element of the Comprehensive Plan, 82.8E, July 9, 1982.)

/15/ The relationship between the amount of housing development encouraged by C-3 District policies and the amount which would have been built otherwise partly depends on their similarities in terms of types, prices/rents, and locations. For example, a policy which encourages market-rate housing outside the C-3 District is likely to generate less net additional units than a policy which encourages more housing at downtown sites where housing would not otherwise be built or one which encourages contributions to a City housing fund which develops housing at lower prices and rents than would otherwise be provided. There are also overall considerations related to the total availability of sites and the total demand for housing of various types. These factors generally indicate that larger numbers of new units would produce a lower percentage of net additional units than smaller amounts of development.

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

- /16/ The basis for these housing estimates is provided in Appendix I. Appendix I primarily describes the addition of households. The addition of households is the same as an increase of occupied housing units. The growth of all housing units would be slightly higher to the extent of a vacancy factor. However, households could also increase if vacancies in the existing stock declined. Because the estimates developed here are order-of-magnitude figures, they would approximate the net addition of households or housing units.
- /17/ The conclusions as to net additional housing could be altered if the C-3 District housing policies under evaluation were applied citywide. For this analysis, only the Alternative 4 housing requirement is assumed to apply throughout the City.
- /18/ Table V.B.9 describes the C-3 District housing forecasts by Subarea and in terms of which units are likely to be part of office projects (those built in Subarea 1).
- /19/ This pattern is similar to past trends. As shown in Table V.D.1, the number of City residents working in San Francisco increased from 1970 to 1980 although the percentage of San Francisco jobs held by residents declined. Although there are no data for the C-3 District in 1970, similar changes are likely to have occurred.
- /20/ Changing residence patterns can only be forecast within the cumulative context of a significant amount of growth over time. The forecasts of residence patterns prepared for this study were prepared for the 1980's and the 1990's. Estimates for 1984 were developed as approximating about one-third of the change expected to occur from 1981 to 1990. It is for this reason that the text describes changes from 1981 to 1990 and 1990 to 2000.
- /21/ It is uncertain how this future trend compares with past trends. Table V.D.1 shows that for the total City, the number of residents working in San Francisco increased although the share that those working in the City represent of all employed residents declined.

There are no data to identify the trend for the C-3 District although it is possible that the percentage of employed residents working in the C-3 District increased because of the relatively large growth of C-3 District jobs during the 1970's. The future trend of an increasing share of employed residents working in the C-3 District will be supported by greater housing development in the City, particularly in locations accessible to downtown.

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

- /22/ It is not assumed that more housing would result in significantly more jobs in San Francisco. San Francisco housing is not assumed to be a major constraint to San Francisco job growth. Further, while additional residents would increase local spending, that additional spending would not support a large amount of additional employment.
- /23/ See Figure IV.D.1 for a map of the eastern and western portions of Alameda, Contra Costa, and San Mateo counties.
- /24/ See Figure II.C.2 for a map of the City Study Areas.
- /25/ While the different mix of business activities among Alternatives would have some effect on residence patterns, it does not appear to be a major factor.
- /26/ The actual number of changes (as employees change jobs, as employers move jobs in and out of San Francisco, and as employees change their housing) would be much larger than the net effects described in Table V.D.10. For example, the net changes would not count those employees who left their jobs to move out of the region and who were replaced by others who moved into the area. The net increase represents the extent to which those newly employed in the C-3 District exceed those who leave and the extent to which more people move into the City than move out. This analysis takes a cumulative perspective on growth over time.
- /27/ As described in note 5, these percentages describe the changing pattern over time in marginal terms. The marginal percentage describing changes over time can be compared with the overall average percentages at the beginning of that period and at the end. If the marginal figure is lower than the average figure at the beginning of the period, the average will have declined by the end of the period. For example, Table V.D.4 shows that the average percentage of C-3 District jobs held by residents would decline from 52.8 percent in 1990 to 49.2 percent in 2000 under Alternative 1. The marginal percentage for that period shown in Table V.D.10 is 30.7 percent.
- /28/ Increasing labor force participation for San Francisco's population, separate from the growth of population, can occur in two ways. One is that the number of existing residents (in 1981) who join the labor force can exceed the number who retire or stop working. The other type of change could occur as individuals who move into San Francisco over time have higher labor force participation than those who move out of the City (still assuming no net increase in households or housing units). Both of these changes will probably contribute to future increases in labor force participation.

NOTES - Residence Patterns and Housing for C-3 District Workers
(Continued)

/29/ These estimates were prepared by multiplying the growth in the number of households from 1980 to 2000 by the existing 1980 ratio of employed persons per household. This total was compared to the growth of employed persons from 1980 to 2000 which incorporates both the net increase in households and changes in labor force participation over time. These estimates were compared to determine the growth of employed persons due to labor force participation separate from the growth due to a larger number of household (see Table 1.3 and the discussion in Appendix I). The increase in employed persons due to increasing labor force participation is larger than the increase due to a net addition of households since the former change applies to all of the City's existing population, a much larger group.

/30/ Although the way in which the Alternatives are defined shows greater differences in impact on the City's housing market than would occur from only the differences in employment, it shows less differences in residence patterns from the perspective of the number of C-3 District workers who live in San Francisco.

In the first instance, lower employment growth means less competition for the City's housing stock than higher employment growth. More housing development as compared to less housing development has a similar effect. Thus, the combination of lower employment growth and greater housing development would result in still less increased competition and fewer housing impacts (as described in the next subsection). The situation for residence patterns was described earlier in the text.

/31/ A major section in Appendix I describes the relationship between job growth and the theoretical basis for the discussion in this impact section.

/32/ The policies of Alternatives 4 and 5 would result in the addition of more lower and moderate income housing units than would the other Alternatives. As a result, there would likely be proportionally less impact on those with fewer housing resources than under the other Alternatives.

E. TRANSPORTATION AND CIRCULATION

1990 C-3 DISTRICT TRANSPORTATION

1990 Transportation Network

The local and regional roadway network serving the C-3 District is expected to remain essentially unchanged from the 1984 network (see Figure IV.E.1, p. IV.E.2). The public transit systems serving the C-3 District are expected to change to incorporate improvements in service and additional capacity that would result from the acquisition of new equipment and from changes in route structures.

Travel Demand Analysis

Trip Generation

Trip generation for 1990 was determined following the same process as that used for 1984 (see Appendix J). The total employment for the C-3 District in 1990 is forecast as 322,530 plus 5,370 construction workers for a total of 327,900 employees (see Table V.C.2, p. V.C.11 and Table V.C.6, p. V.C.16). Of this total, 6,510 employees would be classified as building maintenance and security and have been excluded for the purposes of trip generation.^{1/} The total 1990 C-3 District employment for the purpose of estimating trip generation would be 321,390.

The total p.m. peak-hour person trip-ends (pte) expected in 1990 would be about 200,000 pte, as shown in Table V.E.1. The percent change from 1984 to 1990 for each transportation mode is indicated in the table. There would be an overall 14 percent increase in the number of person trip-ends between 1984 and 1990.

Modal Split

The modal split percentage for 1990 trips are based on the conditions expected in 1984 and predictions of change. The composite modal split for 1990 would have about 27% of the travel in automobile, 48% on transit and about 25% as primary walk trips. The 1990 modal split shows a shift from auto to transit of about 1% overall from the 1984 modal split. The distribution of person trip-ends in autos in 1990 shows a shift to

TABLE V.E.1: C-3 DISTRICT TOTAL P.M. PEAK-HOUR PERSON TRIP-ENDS BY MODE(a), BY SUBAREA, 1990

Primary Mode of Travel	Subarea (b)							Total	Percent(c)	Percent Change 1984-1990
	1	2	3	4	5	6	7			
Drive Alone	11,810	2,800	1,620	1,740	2,840	4,680	2,120	27,610	14	3.4
Carpool(d)	11,830	1,430	1,970	1,650	1,000	6,480	350	24,710	12	17.0
Vanpool(e)	2,680	360	-	-	-	-	-	3,040	2	22.6
Muni	23,640	1,680	1,920	1,470	5,250	2,660	2,290	38,910	19	11.6
BART	21,050	2,500	600	2,360	1,730	2,040	1,000	31,280	15	21.2
AC Transit	6,780	1,680	310	130	50	460	-	9,410	5	22.0
SamTrans	1,340	330	-	-	230	470	-	2,370	1	24.1
Charter/Club Bus	1,060	120	-	-	-	-	-	1,180	1	21.6
SPRR	3,210	430	70	210	120	400	80	4,520	2	28.0
GGT Bus	6,060	380	150	360	270	130	40	7,390	4	23.6
GGT Ferry	740	400	-	-	-	-	-	1,140	1	46.2
Tiburon Ferry	180	30	-	-	-	-	-	210	-	16.7
Jitney	100	70	-	-	320	-	-	490	-	8.9
Motorcycle	280	-	-	100	-	-	-	380	-	15.2
Bicycle	10	-	-	80	-	10	-	100	-	11.1
Walk(f)	22,100	3,090	4,020	2,740	7,150	6,810	4,070	49,980	25	10.1
Taxi	210	-	-	-	270	-	-	480	-	9.1
TOTALS	113,080	15,300	10,660	10,840	19,230	24,140	9,950	203,200	100	13.7

(a) Subarea boundaries are shown in Figure II.C.1.

(b) Total person trip-ends to destinations or from origins in the C-3 District.

(c) Percent of total travel

(d) Carpools are vehicles with up to three persons including the driver.

(e) Vanpools are vehicles with more than three persons including the driver.

(f) Walk trips include both home-based and non-home-based travel. The walk trips are about 15% home-based (i.e., persons walking home) and about 85% non-home-based (i.e., persons walking to destination other than home).

SOURCE: TJKM Transportation Consultants

V. Environmental Impacts

higher occupancy autos (carpool, vanpool) from Drive Alone from the 1984 distribution. The shift to transit and ridesharing would result from the bridges operating at or near capacity during the peak hours.

Modal split for peak-hour trips and for total daily trips differ in relation to the attractiveness of specific modes of travel during different times of the day. (See Appendix J.) Residence location and modal split percentages for 1990 total C-3 District p.m. peak-hour work travel by Subarea are shown in Table J.10, Appendix J.

Modal split percentages for non-work travel are shown in Table J.8, Appendix J. As described in the appendix, non-work travel during the p.m. peak hour is more locally oriented than non-work travel during the entire day. The total C-3 District person trip-ends by mode that would be generated in 1990 are shown in Table V.E.1.

Public Transportation

The expected 1990 ridership and capacities at study screenlines is shown in Table V.E.2. Transit capacities are estimates based on current (1982-1987) five-year plans for each transit agency, including additional improvements between 1987 and 1990./2/ For through travel (travel not originating in or destined to the C-3 District), the transit ridership is the expected future ridership based on historical growth trends.

The p.m. peak-hour ridership and capacity figures shown in Table V.E.2 indicate that no ridership would exceed total seated plus standing capacity in 1990. However, these ridership and capacity figures are for the total peak hour. During the peak hour, demand would be expected to vary and the demand may exceed capacity on individual transit vehicles or routes for a period of time during the peak hour. In general, the conditions forecast for 1990, given the future capacities, are expected to be similar to 1984 conditions.

Traffic

Vehicles generated by employment in the Subareas were assigned to the roadways based on residence location for work trips and based on respective origins and destinations for other trips. The expected 1990 p.m. peak-hour (4:30 - 5:30 p.m.) regional traffic volumes and percent change from 1984 are shown in Table V.E.3. The expected traffic demand in

TABLE V.E.2: P.M. PEAK-HOUR OUTBOUND TRANSIT RIDERSHIP AND CAPACITIES AT REGIONAL AND C-3 DISTRICT SCREENLINES(a), 1990

Transit Agency	Screenline (a)	Demand (Riders)(b)	Transit System Capacity(c)	
			Seats	Seats Plus Standees
Muni	Northeast	7,180	5,230	7,850
	Northwest	9,960	6,920	10,380
	Southwest	13,660	10,350	17,600
	Southeast	3,010	2,270	3,410
BART	Trans-Bay Tube	20,570	14,400	21,600
	Southwest of Civic Center	8,810	7,040	10,560
AC Transit	Bay Bridge Toll Plaza	9,410	10,690	13,360
GGT Bus	Golden Gate Bridge Toll Plaza	7,150	7,760	9,650
GGT Ferry	Bay	1,140	1,930	2,830
Tiburon Ferry	Bay	210	450	650
SamTrans	San Mateo County Line	2,370	2,000	2,500
CalTrain (SPRR)	Fourth Street Station	4,070	6,230	6,230

(a) Screenlines shown in Figure IV.E.2, p. IV.E.4.

(b) Demand includes both C-3 District and transit riders from outside the C-3 District.

(c) System capacity estimates are based on 1982-87 Five-year Plans for each agency.

SOURCE: TJKM Transportation Consultants

1990 would be approaching or exceeding the roadway capacities for outbound traffic during the peak hour. Although the demand for travel on I-280 is shown as exceeding capacity in Table V.E.3, I-280 would be expected to operate near capacity with the excess demand shifting to US-101 or surface streets as traffic volumes would tend to reach an equilibrium level over all the available routes.

For each Subarea, vehicles can generally leave each Subarea in four directions (north, south, east and west). Directional capacities/3/ for each Subarea were developed based on the number of roadways providing access to each Subarea. The directional traffic

TABLE V.E.3: P.M. PEAK-HOUR OUTBOUND TRAFFIC VOLUMES AND CAPACITIES AT REGIONAL SCREENLINES(a), 1990

<u>Freeway</u>	<u>Direction</u>	<u>Demand (vph) (b)</u>	<u>Capacity (vph)</u>
Bay Bridge (I-80)	East	8,400 (c)	9,000
Golden Gate Bridge (US-101)	North	6,610 (c)	7,200
US-101 (south of Harney Way)	South	7,990	8,000
I-280 (between Alemany Boulevard and San Jose Avenue)	South	8,870 (d)	8,000

(a) See Figure IV.E.2 for locations of screenlines.

(b) Vehicles Per Hour

(c) Demand expected to remain essentially the same as 1984 with shifts to other modes or to other than peak hour.

(d) Although demand is shown to exceed capacity, I-280 would most likely operate near capacity with excess demand expected to shift to alternate routes (US-101 or surface streets); delay on all affected routes would most likely be increased.

SOURCE: TJKM Transportation Consultants

volumes expected in 1990 were projected for each Subarea. For example, vehicles destined to the North Bay were assigned to roadways leading generally to the north and to the west from each Subarea. Since the capacities are combined capacities for a varying number of roadways, the values should be considered as indicators of general conditions for comparison purposes.

The total directional volumes and volume-to-capacity (V/C) ratios for each Subarea in 1990 are shown in Table V.E.4. The V/C ratios generally indicate an increase in demand in all the Subareas, although Subareas Three and Four would experience slightly greater increases in demand than would the other Subareas.

Eleven key intersections were selected for p.m. peak-hour traffic analyses to provide a basis of comparison for conditions expected in future years. The intersections are key intersections near freeway ramps or other important locations that function as indicators of peak-hour traffic conditions (see Figure IV.E.2). The V/C ratios and Levels of Service

TABLE V.E.4: C-3 DISTRICT P.M. PEAK-HOUR OUTBOUND DIRECTIONAL TRAFFIC VOLUMES AND VOLUME-TO-CAPACITY (V/C) RATIOS, BY SUBAREA, 1990

Subarea	Northbound			Southbound			Eastbound			Westbound		
	Demand	Capacity	V/C (a)	Demand	Capacity	V/C (a)	Demand	Capacity	V/C (a)	Demand	Capacity	V/C (a)
1	3,150	8,590	0.37	4,530	11,100	0.41	-	-	-	10,320	18,400	0.56
2	6,130	11,260	0.54	4,100	11,030	0.37	-	-	-	2,890	2,860	1.01
3	7,670	13,900	0.55	6,190	8,610	0.72	2,520	3,330	0.76	2,910	3,570	0.82
4	7,260	7,340	0.99	2,660	6,370	0.42	1,930	3,670	0.53	4,790	8,720	0.55
5	2,830	8,390	0.34	3,750	6,440	0.58	5,250	12,760	0.41	7,600	15,580	0.49
6	3,140	6,300	0.50	2,380	4,650	0.51	1,700	4,590	0.37	4,700	11,190	0.42
7	1,920	4,250	0.45	800	2,860	0.28	3,020	5,320	0.57	3,900	8,770	0.44

(a) Volume/capacity for directional intersection approaches as shown

SOURCE: TJKM Transportation Consultants.

(LOS) expected in 1990 are shown in Table V.E.5. Three intersections (Mission Street at Beale Street and at First Street and Brannan at Sixth Street) would be expected to operate at or near capacity or Level of Service E (or worse) conditions. At these intersections, traffic operation could generally be described as poor with vehicles delayed up to several signal cycles. Level of Service F operations indicate jammed conditions and traffic would be expected to shift to other intersections or to different times of day. Operating conditions at all of the intersections would be expected to deteriorate slightly from 1984 levels. However, only one intersection (First/Mission Streets) would be expected to shift into a worse Level of Service (D to E).

TABLE V.E.5: PEAK-HOUR VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS) AT SPECIAL STUDY LOCATIONS(a), 1990

<u>Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>
Battery & Washington Streets	0.69	B	-	-
Battery & Clay Streets	-	-	0.76	C
Beale & Mission Streets	0.97	E	0.99	E
Brannan & Sixth Streets	0.99	E	1.34	F(c)
Bryant & Second Streets	0.74	C	0.65	B(b,d)
California & Montgomery Streets	0.84	D	0.90	D
First & Mission Streets	0.82	D	0.93	E
First & Harrison Streets	0.49	A	0.66	B(d)
Howard & New Montgomery Streets	0.41	A	0.56	A
Market & Third Streets	0.76	C	0.84	C
Stockton & Sutter Streets	0.63	B	0.88	D

- (a) See Figure IV.E.2 for Special Study Locations
- (b) On-ramp to Bay Bridge from Bryant St. currently operating as bus/carpool-only ramp during p.m. peak hour. The V/C and LOS indicated are based on counts taken when the intersection was open to all vehicles.
- (c) Based on demand expected in 1990. Since demand exceeds capacity, some shift would occur (see text).
- (d) This intersection subject to substantial changes in operating conditions dependent on congestion on bridge.

SOURCE: TJKM Transportation Consultants

Parking

The total number of spaces available to the C-3 District in 1990 is estimated to be 54,000. The expected demand for spaces in 1990 is estimated to be 51,600 spaces which would represent average occupancy of approximately 96 percent. This occupancy indicates that the parking demand is essentially at capacity, with drivers expected to have greater difficulty locating parking spaces than in 1984. The expected demand for spaces is estimated on the basis of the trip generation and modal split percentages shown in Appendix J for work trips and non-work trips.

Pedestrian Circulation

The eight pedestrian study locations shown in Figure IV.E.2, p. IV.E.4 provide indications of overall pedestrian activity in the study area. The pedestrian activity expected in 1990 is shown in Table V.E.6. A total of nine areas (six during the noon hour and three during the p.m. peak hour) are expected to be "constrained" in 1990 as compared with five (four during the noon hour, one during the p.m. peak hour) in 1984. Constrained conditions indicate some limitations in movement but not into the "crowded" (or restricted) category (see Appendix J, Table 13 and Figure J.2). As described in Appendix J, pedestrian flow regimes with conditions worse than "constrained" include "crowded," then "congested," and finally "jammed."

2000 C-3 DISTRICT TRANSPORTATION

2000 Transportation Network

The local and regional roadway network serving the C-3 District is expected to remain essentially unchanged from the 1984 and 1990 networks, as shown in Figure IV.E.1, p. IV.E.2.

The public transit systems serving the C-3 District are expected to change to incorporate improvements in service and additional capacity that would result from the acquisition of new equipment.

TABLE V.E.6: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 1990

Location	Quadrant	Rate in P/F/M(b)		Pedestrian Flow Regime (c)	
		Noon	P.M.	Noon Hour	P.M.
		Hour	Peak Hour	Peak Hour	Peak Hour
Sacramento	NW	3.7	2.9	Impeded	Impeded
Front	NW	1.3	1.1	Unimpeded	Unimpeded
Front	NE	2.3	1.1	Impeded	Unimpeded
Sacramento	NE	3.8	2.1	Impeded	Impeded
Sacramento	SE	2.2	1.8	Impeded	Unimpeded
Front	SE	4.5	2.4	Impeded	Impeded
Front	SW	5.3	5.5	Impeded	Impeded
Sacramento	SW	3.8	3.5	Impeded	Impeded
Sacramento	NW	2.4	1.9	Impeded	Unimpeded
Sansome	NW	2.4	2.9	Impeded	Impeded
Sansome	NE	1.6	1.6	Unimpeded	Unimpeded
Sacramento	NE	2.7	1.7	Impeded	Unimpeded
Sacramento	SE	2.2	1.3	Impeded	Unimpeded
Sansome	SE	3.4	2.7	Impeded	Impeded
Sansome	SW	1.9	1.9	Unimpeded	Unimpeded
Sacramento	SW	1.8	1.1	Unimpeded	Unimpeded
First	NE	2.4	4.4	Impeded	Impeded
Mission	NE	2.2	1.1	Impeded	Unimpeded
Mission	SE	0.9	7.5	Unimpeded	Constrained
First	SE	1.6	1.6	Unimpeded	Unimpeded
First	SW	2.4	2.8	Impeded	Impeded
Mission	SW	1.1	5.0	Unimpeded	Impeded
Mission	NW	2.4	3.5	Impeded	Impeded
First	NW	2.3	2.5	Impeded	Impeded
Montgomery	NE	7.8	4.1	Constrained	Impeded
Market	NW	4.0	2.7	Impeded	Impeded
Market	NE	4.3	2.7	Impeded	Impeded
New Montgomery	N	2.6	2.0	Impeded	Impeded
New Montgomery	S	3.2	2.4	Impeded	Impeded
Market	SE	3.2	3.5	Impeded	Impeded
Market	SW	2.2	2.7	Impeded	Impeded
Post	S	5.9	1.3	Impeded	Unimpeded
Post	N	3.7	1.0	Impeded	Unimpeded
Montgomery	NW	6.3	4.8	Constrained	Impeded
Sutter	NW	5.8	4.0	Impeded	Impeded
Kearny	NW	7.2	3.0	Constrained	Impeded
Kearny	NE	5.0	3.0	Impeded	Impeded
Sutter	NE	4.8	2.5	Impeded	Impeded
Sutter	SE	3.0	1.6	Impeded	Unimpeded
Kearny	SE	3.9	2.3	Impeded	Impeded
Kearny	SW	4.8	2.4	Impeded	Impeded
Sutter	SW	4.3	2.1	Impeded	Impeded
Geary	NW	1.5	1.4	Unimpeded	Unimpeded
Stockton	NW	3.8	3.7	Impeded	Impeded
Stockton	NE	5.3	3.4	Impeded	Impeded
Geary	NE	6.4	4.1	Constrained	Impeded
Geary	SE	3.7	2.7	Impeded	Impeded
Stockton	SE	2.7	2.8	Impeded	Impeded
Stockton	SW	6.9	6.5	Constrained	Constrained
Geary	SW	8.0	6.1	Constrained	Constrained
Stockton	NE	2.3	1.7	Impeded	Unimpeded
Market	NE	3.2	2.9	Impeded	Impeded
Market	SE	2.6	2.6	Impeded	Impeded
Fourth	SE	1.6	1.8	Unimpeded	Unimpeded
Fourth	SW	4.7	3.7	Impeded	Impeded
Market	SW	4.3	3.4	Impeded	Impeded
Market	NW	3.3	3.4	Impeded	Impeded
Ellis	NW	0.9	1.0	Unimpeded	Unimpeded
Ellis	NW	1.5	1.5	Unimpeded	Unimpeded
Stockton	NW	4.3	5.1	Impeded	Impeded
Powell	E	2.4	1.6	Impeded	Unimpeded
Market	NE	3.4	2.1	Impeded	Impeded
Market	SE	4.3	2.6	Impeded	Impeded
Market	SW	3.3	2.4	Impeded	Impeded
Market	NW	4.2	3.9	Impeded	Impeded
Fifth	E	0.5	0.4	Unimpeded	Open
Plaza	-	1.1	0.9	Unimpeded	Unimpeded
Powell	W	3.3	3.3	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J

SOURCE: TJKM Transportation Consultants

V. Environmental Impacts

Travel Demand Analysis

Trip Generation

Trip generation for each of the five Alternatives in 2000 was determined following the same process as used for 1984 and 1990. The total employment for the C-3 District in 2000 for Alternative 1 is forecast as 387,230 plus 5,350 construction workers for a total of 392,580 employees. (See Tables V.C.2 and V.C.6.) Of this total, 7,880 employees would be classified as building maintenance and security. The total 2000 C-3 District employment for trip generation purposes would be 384,700 for Alternative 1, and similarly 381,590 for Alternative 2, 377,060 for Alternative 3, 364,780 for Alternative 4 and 365,880 for Alternative 5.

The total p.m. peak hour person trip-ends expected in 2000 range from about 230,000 pte to 240,000 pte as shown in Table V.E.7. The trips include work trips and non-work trips. There would be an overall 13 to 18 percent increase in the number of person trip-ends between 1990 and 2000, based on the expected employment for each Alternative.

Modal Split

The modal split for 2000 was estimated on the basis of the conditions expected in 1990 and predictions of change. The composite modal shift for 2000 would have about 26% of the travel in autos, about 50% in transit and about 24% would be primary walk trips. Overall, the 2000 modal shift represents a shift of about 2% of the trips from auto to transit from the 1990 modal split. Similarly, a shift from Drive Alone to carpool or vanpool is also shown. These shifts would result from the bridges operating at or near capacity during the peak hours. The shifts included consideration of the transit capacities expected in the year 2000.

Modal split for peak-hour trips and for total daily trips differ in relation to the attractiveness of specific modes of travel during different times of the day. (See Appendix J.) Residence location and modal split percentages expected in the year 2000 for total C-3 District p.m. peak-hour work travel by Subarea are shown in Table J.11, Appendix J, for each Alternative.

V. Environmental Impacts

Modal split estimates for non-work travel are shown in Tables J.7 and J.8, Appendix J. As described in the appendix, non-work travel during the p.m. peak hour is more locally oriented than non-work travel during the entire day. The total C-3 District person trip-ends by mode that would be generated in 2000 by each alternative are shown in Table V.E.7.

Public Transportation

The expected 2000 ridership at study screenlines is shown in Table V.E.8. The ridership is based on the trip generation and modal split estimates described in Appendix J for C-3 District travel. For through travel (travel not originating in or destined to the C-3 District), the transit ridership is the expected future ridership based on historical growth trends.

Transit ridership would be expected to be less than total seated plus standing capacity during the p.m. peak hour. Ridership would be highest for Alternative 1 and lowest for Alternative 3. Statistically, the range represented by the Alternatives (about 3%) is within the margin of accuracy for the Transportation Analysis (estimated to be plus or minus 10-15%).

Traffic

The total person trip-ends projected for 2000 would travel by many modes, as shown in Table V.E.7. The modes with primary impact on traffic volumes include Drive Alone, Carpool, and Vanpool. The total number of vehicles for these modes was assigned to the roadway network based on the trip generation and modal split methodology described in Appendix J. Vehicles generated by employment in the Subareas were assigned to the roadways based on residence location for work trips and based on respective origins and destinations for other trips. The expected 2000 p.m. peak-hour (4:30 - 5:30 p.m.) regional traffic volumes and percent change from 1990 are shown in Table V.E.9.

The total directional volumes and volume-to-capacity (V/C) ratios for each Subarea and each alternative in 2000 are shown in Table V.E.10. Alternative 1 would have the highest traffic volumes and Alternative 4 would have the lowest traffic volumes.

TABLE V.E.7: C-3 DISTRICT TOTAL P.M. PEAK-HOUR PERSON TRIP-ENDS(a) BY MODE, 2000, ALTERNATIVES 1 THROUGH 5

Primary Mode of Travel	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
	Pte Total	% Change 1990-2000	Pte Total	% Change 1990-2000	Pte Total	% Change 1990-2000	Pte Total	% Change 1990-2000	Pte Total	% Change 1990-2000
Drive Alone	28,940	4.8	28,760	4.2	28,500	3.2	27,550	-0.2	27,800	0.7
Carpool	30,200	22.2	29,980	21.3	29,830	20.7	28,350	14.7	28,440	15.1
Vanpool	3,810	25.3	3,780	24.3	3,680	21.1	3,600	18.4	3,580	17.8
Muni	44,330	13.9	43,920	12.9	43,620	12.1	43,400	11.5	43,520	11.8
BART	42,120	34.7	43,730	33.4	41,170	31.6	39,480	26.2	39,510	26.3
AC Transit	9,650	2.6	9,580	1.8	9,350	-0.6	8,960	-4.8	8,990	-4.5
SamTrans	3,220	35.9	3,200	35.0	3,130	32.1	2,950	24.5	2,970	25.3
Charter/Club Bus	1,490	26.3	1,470	24.6	1,420	20.3	1,390	17.8	1,400	18.6
SPRR	5,770	27.7	5,730	26.8	5,600	23.9	5,480	26.2	5,450	20.6
GGT Bus	9,940	34.5	9,850	33.3	9,710	31.4	9,340	26.4	9,290	25.7
GGT Ferry	1,490	30.7	1,480	29.8	1,420	24.6	1,340	17.5	1,370	20.2
Tiburon Ferry	260	23.8	260	23.8	260	23.8	260	23.8	250	19.0
Jitney	600	22.4	600	22.4	610	24.5	540	10.2	580	18.4
Motorcycle	420	10.5	410	5.3	400	5.3	410	7.9	400	5.3
Bicycle	100	0	100	-	100	-	100	-	100	-
Walk	57,110	14.3	56,610	13.3	56,030	12.1	55,080	10.2	55,080	10.2
Taxi	580	20.8	580	20.8	590	22.9	560	16.7	570	18.8
TOTALS	240,030	18.1	238,040	17.1	235,420	15.9	228,790	12.6	229,300	12.8

(a) Total person-trips to destinations or from origins in the C-3 District.

SOURCE: TJKM Transportation Consultants

TABLE V.E.8: P.M. PEAK-HOUR OUTBOUND TRANSIT RIDERSHIP AT REGIONAL AND C-3 DISTRICT SCREENLINES (a), 2000, FOR ALTERNATIVES 1 THROUGH 5

Transit Agency	Screenline	Capacity	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
			Riders	% Change(b)	Riders	% Change	Riders	% Change	Riders	% Change	Riders	% Change
Muni	Northeast (NE)	8,640	8,210	14.3	8,140	13.4	8,040	12.0	8,150	13.5	8,180	13.9
	Northwest (NW)	11,420	11,160	12.0	11,060	11.0	10,890	9.3	11,030	10.7	11,080	11.2
	Southwest (SW)	19,360	15,240	11.2	15,130	10.8	15,030	10.0	14,890	9.0	14,930	9.3
	Southeast (SE)	3,750	3,670	21.9	3,640	20.9	3,680	22.3	3,450	14.6	3,560	18.3
BART	Trans-Bay Tube	29,400	29,420	43.0	29,160	41.8	28,750	39.8	27,390	33.2	27,430	33.3
	SW of Civic Center	14,200	10,860	23.2	10,760	22.1	10,640	20.8	10,120	14.9	10,120	14.9
AC Transit	Bay Bridge	13,360	9,650	2.6	9,580	1.8	9,350	-0.6	8,960	-0.5	8,990	-0.4
GGT Bus	G. Gate Bridge	11,680	9,620	34.5	9,530	33.3	9,400	31.5	9,030	26.3	9,000	25.9
GGT Ferry	Bay	2,830	1,490	30.7	1,480	29.8	1,420	24.6	1,340	17.5	1,370	20.8
Tiburon Ferry	Bay	650	260	23.8	260	23.8	260	23.8	260	23.8	250	19.0
SamTrans	SW Study Boundary	3,250	3,220	35.9	3,200	35.0	3,130	32.1	2,950	24.5	2,970	25.3
CalTrain (SPRR)	Fourth St. Station	6,230	5,230	28.5	5,190	27.5	5,070	24.6	4,950	21.6	4,930	21.2

(a) See Figure IV.E.2 for screenline locations.

(b) Percent change 1990 to 2000.

SOURCE: TJKM Transportation Consultants

TABLE V.E.9: P.M. PEAK-HOUR OUTBOUND TRAFFIC VOLUMES AND CAPACITIES AT REGIONAL SCREENLINES(a), 2000, ALTERNATIVES 1 THROUGH 5

		<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>
	<u>Capacity</u>	<u>vph(b)</u>	<u>vph</u>	<u>vph</u>	<u>vph</u>	<u>vph</u>
Bay Bridge (I-80)	9,000	9,370(c)	9,350	9,330	8,870	8,940
Golden Gate Bridge (US-101)	7,200	7,200(b)	7,170	7,140	6,980	6,970
US-101 (south of Harney Way)	8,000	9,220(c)	9,190	9,170	8,990	8,980
I-280 (between Alemany Blvd. and San Jose Avenue)	8,000	10,190(c)	10,160	10,140	9,960	9,950

(a) See Figure IV.E.1 for screenline locations.

(b) Vehicles Per Hour

(c) Demand expected in 2000. Since demand exceeds capacity, some shift would occur (see text).

SOURCE: TKJM Transportation Consultants

Eleven key intersections were selected for p.m. peak hour traffic analyses to provide a basis of comparison for conditions expected in future years. The V/C ratios and Levels of Service (LOS) expected in 2000 are shown in Table V.E.11. Traffic projections from the five Alternatives at the intersection level are similar to the extent that the V/C calculation yielded one set of equivalent value for Alternatives 1, 2 and 3 and, another set of equivalent values for Alternatives 4 and 5. Three intersections would be expected to operate at or near capacity under Level of Service E (or worse) conditions for all five Alternatives. At these intersections, traffic operations could generally be described as poor with vehicles delayed up to several signal cycles. Level of Service F operations indicate jammed conditions, and traffic would be expected to shift to other intersections or to different times of day.

Parking

The total number of spaces available to the C-3 District in 2000 is estimated to be 61,000, based on an average increase of 1.4 percent. The expected demand for spaces needed in 2000 varies from 58,260 (Alternative 4) to 61,200 (Alternative 1) resulting in an average

TABLE V.E.10: C-3 DISTRICT P.M. PEAK-HOUR OUTBOUND DIRECTIONAL TRAFFIC VOLUMES AND VOLUME-TO-CAPACITY (V/C) RATIOS BY SUBAREA, 2000, ALTERNATIVES 1 THROUGH 5

Subarea	Capacity (vph) (a)	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
		vph	V/C (b)	vph	V/C	vph	V/C	vph	V/C	vph	V/C
NORTHBOUND											
1	8,590	3,310	0.39	3,280	0.38	3,230	0.38	3,260	0.38	3,240	0.38
2	11,260	6,550	0.58	6,550	0.58	6,520	0.58	6,480	0.58	6,520	0.58
3	13,900	8,490	0.61	8,490	0.61	8,500	0.61	8,430	0.61	8,430	0.61
4	7,340	7,830	1.07	7,830	1.07	7,860	1.07	7,820	1.07	7,828	1.07
5	8,390	3,040	0.36	3,040	0.36	3,060	0.36	3,030	0.36	3,050	0.36
6	6,300	3,350	0.53	3,350	0.53	3,340	0.53	3,450	0.55	3,450	0.55
7	4,250	2,040	0.48	2,040	0.48	2,020	0.48	2,060	0.48	2,060	0.48
SOUTHBOUND											
1	11,100	4,870	0.44	4,820	0.43	4,770	0.43	4,870	0.44	4,790	0.43
2	11,030	4,920	0.45	4,890	0.44	4,730	0.43	4,530	0.41	4,660	0.42
3	8,610	7,420	0.86	7,420	0.86	7,500	0.87	6,750	0.78	6,820	0.79
4	6,370	2,880	0.45	2,850	0.45	2,980	0.47	2,790	0.44	2,850	0.48
5	6,440	4,140	0.64	4,140	0.64	4,180	0.65	4,020	0.62	4,090	0.64
6	4,650	2,710	0.58	2,710	0.58	2,680	0.58	2,630	0.57	2,600	0.56
7	2,860	840	0.29	840	0.29	840	0.29	840	0.29	830	0.29
EASTBOUND											
1	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-
3	3,330	2,870	0.86	2,870	0.86	2,860	0.86	2,630	0.79	2,810	0.84
4	3,670	2,130	0.58	2,130	0.58	2,130	0.58	2,130	0.58	2,130	0.58
5	12,760	5,790	0.45	5,790	0.45	5,790	0.45	5,740	0.45	5,760	0.45
6	4,590	1,940	0.42	1,940	0.42	1,920	0.42	1,880	0.41	1,860	0.41
7	5,320	3,350	0.63	3,340	0.63	3,330	0.63	3,320	0.62	3,320	0.62
WESTBOUND											
1	18,400	10,880	0.59	10,810	0.59	10,650	0.58	10,820	0.59	10,720	0.58
2	2,860	3,360	1.17	3,360	1.17	3,280	1.15	3,210	1.12	3,280	1.15
3	3,570	3,190	0.89	3,180	0.89	3,180	0.89	3,060	0.86	3,060	0.86
4	8,720	5,210	0.60	5,200	0.60	5,210	0.60	5,150	0.59	5,130	0.59
5	15,580	8,110	0.52	8,090	0.52	8,110	0.52	7,900	0.51	7,940	0.51
6	11,190	5,000	0.45	4,990	0.45	5,100	0.46	5,150	0.46	5,110	0.46
7	8,770	4,090	0.47	4,070	0.46	4,000	0.46	4,060	0.46	4,040	0.46

(a) Vehicles per hour approaching from the direction shown
(b) Volume/capacity for directional intersection approaches shown

SOURCE: TKJM Transportation Consultants.

V. Environmental Impacts

TABLE V.E.11: P.M. PEAK-HOUR VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS) AT SPECIAL STUDY LOCATIONS(a), 2000, ALTERNATIVES 1 THROUGH 5

Intersection	Alternatives 1, 2, 3				Alternatives 4, 5			
	AM		PM		AM		PM	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Battery & Washington Streets	0.72	C	-	-	0.21	C	-	-
Battery & Clay Streets	-	-	0.79	C	-	-	0.78	C
Beale & Mission Streets	1.04	F	1.06	F	1.03	F	1.05	C
Brannan & Sixth Streets	1.10	F	1.42	F	1.09	F	1.41	F(c)
Bryant & Second Streets(b,d)	0.81	D	0.72	C	0.80	C	0.72	F(c)
California & Montgomery Streets	0.86	D	0.95	E	0.85	D	0.94	E
First & Mission Streets	0.85	D	1.00	E	0.84	D	0.99	E
First & Harrison Streets(d)	0.54	A	0.73	C	0.54	A	0.73	C
Howard & New Montgomery Streets	0.45	A	0.62	B	0.44	A	0.60	A
Market & Third Streets	0.82	D	0.86	D	0.82	D	0.86	D
Stockton & Sutter Streets	0.67	B	0.90	E	0.69	B	0.92	E

- (a) See Figure IV.E.2 for special study locations.
- (b) On-ramp to Bay Bridge from Bryant Street; currently operating as bus/carpool-only ramp during p.m. peak hour. The V/C and LOS indicated are based on counts taken when the intersection was open to all vehicles.
- (c) Based on demand expected in 2000. Since demand exceeds capacity, some shift would occur. (See text.)
- (d) These two intersections are the easternmost access ramps to the Bay Bridge that connect directly to surface streets. Consequently, both intersections are subject to substantial changes in operating conditions depending upon the degree of congestion on the Bay Bridge.

SOURCE: TJKM Transportation Consultants

occupancy of approximately 96 to 100 percent. Parking demand for the other alternatives would fall within the range described above (Alternative 2, 60,730 spaces; Alternative 3, 60,100 spaces; Alternative 5, 58,500 spaces). The expected number of spaces needed is based on the trip generation and modal split percentages shown in Appendix J for work trips and other trips.

V. Environmental Impacts

Pedestrian Circulation

The eight pedestrian study locations shown in Figure IV.E.2 provide indications of overall pedestrian activity in the study area. The pedestrian activity expected in 2000 is shown in Tables V.E.12 to V.E.16. There were two time periods (noon and p.m. peak hour) and eight (or more) sidewalk areas studied at each of the eight locations. A total of 14 areas for Alternatives 1 or 2 and 13 areas for Alternatives 3, 4, or 5 are expected to be "constrained" in 2000, compared with a total of 9 areas in 1990. These conditions indicate some limitations for movement but not into the "crowded" (or restricted) category. (See Appendix J, Table 13.) As described in Appendix J, pedestrian flow regimes with conditions worse than "constrained" include "crowded," then "congested," and finally "jammed."

NOTES - Transportation and Circulation

/1/ Office employee trip rates include employee work and other trips, as well as trips by visitors, maintenance and service personnel, deliveries and others.

/2/ Transit system capacities for 1990 and 2000 are based on data contained in :

- 1982-87 Five-year Plans for:
 - San Francisco Municipal Railway
 - Bay Area Rapid Transit District
 - A-C Transit District
 - San Mateo County Transit District
 - Golden Gate Bridge Highway and Transportation District
 - CalTrain (Southern Pacific Railroad)

- and on discussion with:

- Muni - Susan Stropes, Projections of Future Muni Demand and Vehicle Requirments, Muni Planning Division, June 1982
- BART - Ward Belding, telephone conversation, January 12, 1983
- A-C - Eric Harris, telephone conversation, January 12, 1983
- SamTrans - Gregory Kipp, telephone conversation, January 13, 1983
- Golden Gate - Alan Zahnadnik, telephone conversation, January 14, 1983
- CalTrain - Eric Shotmire, telephone conversation, January 18, 1983
- Ben Chuck, telephone conversation, January 12, 1983

/3/ Highway Research Board, Highway Capacity Manual, (Washington, D. C., 1965), pp. 111-159.

TABLE V.E.12: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 2000,
ALTERNATIVE 1

Location	Quadrant	Rate in P/F/M(b)		Pedestrian Flow Regime (c)	
		Noon Hour	P.M. Peak Hour	Noon Hour	P.M. Peak Hour
Sacramento	NW	4.3	3.4	Impeded	Impeded
Front	NW	1.5	1.2	Unimpeded	Unimpeded
Front	NE	2.7	1.2	Impeded	Unimpeded
Sacramento	NE	4.5	2.5	Impeded	Impeded
Sacramento	SE	2.6	2.2	Impeded	Impeded
Front	SE	5.3	2.9	Impeded	Impeded
Front	SW	6.3	6.4	Constrained	Constrained
Sacramento	SW	4.4	4.1	Impeded	Impeded
Sacramento	NW	2.8	2.2	Impeded	Impeded
Sansome	NW	2.8	3.4	Impeded	Impeded
Sansome	NE	1.9	1.9	Unimpeded	Unimpeded
Sacramento	NE	3.1	1.9	Impeded	Unimpeded
Sacramento	SE	2.5	1.5	Impeded	Unimpeded
Sansome	SE	4.0	3.2	Impeded	Impeded
Sansome	SW	2.2	2.3	Impeded	Impeded
Sacramento	SW	2.1	1.3	Impeded	Unimpeded
First	NE	2.8	5.2	Impeded	Impeded
Mission	NE	2.5	1.2	Impeded	Unimpeded
Mission	SE	1.1	8.9	Unimpeded	Constrained
First	SE	1.9	1.9	Unimpeded	Unimpeded
First	SW	2.9	3.3	Impeded	Impeded
Mission	SW	1.3	5.9	Unimpeded	Impeded
Mission	NW	2.8	4.2	Impeded	Impeded
First	NW	2.6	2.9	Impeded	Impeded
Montgomery	NE	9.2	4.8	Constrained	Impeded
Market	NW	4.7	3.1	Impeded	Impeded
Market	NE	5.1	3.2	Impeded	Impeded
New Montgomery	N	3.0	2.3	Impeded	Impeded
New Montgomery	S	3.8	2.9	Impeded	Impeded
Market	SE	3.7	4.1	Impeded	Impeded
Market	SW	2.6	3.2	Impeded	Impeded
Post	S	6.9	1.5	Constrained	Unimpeded
Post	N	4.3	1.2	Impeded	Unimpeded
Montgomery	NW	7.4	5.6	Constrained	Impeded
Sutter	NW	6.8	4.6	Constrained	Impeded
Kearny	NW	8.5	3.5	Constrained	Impeded
Kearny	NE	5.8	3.5	Impeded	Impeded
Sutter	NE	5.6	3.0	Impeded	Impeded
Sutter	SE	3.5	1.9	Impeded	Unimpeded
Kearny	SE	4.5	2.6	Impeded	Impeded
Kearny	SW	5.6	2.9	Impeded	Impeded
Sutter	SW	5.1	2.4	Impeded	Impeded
Geary	NW	1.7	1.7	Unimpeded	Unimpeded
Stockton	NW	4.4	4.2	Impeded	Impeded
Stockton	NE	6.0	3.9	Constrained	Impeded
Geary	NE	7.3	4.7	Constrained	Impeded
Geary	SE	4.3	3.1	Impeded	Impeded
Stockton	SE	3.1	3.2	Impeded	Impeded
Stockton	SW	7.9	7.4	Constrained	Constrained
Geary	SW	9.1	7.0	Constrained	Constrained
Stockton	NE	2.7	1.9	Impeded	Unimpeded
Market	NE	3.7	2.3	Impeded	Impeded
Market	SE	3.4	2.9	Impeded	Impeded
Fourth	SE	1.9	2.1	Unimpeded	Impeded
Fourth	SW	5.4	4.2	Impeded	Impeded
Market	SW	4.9	3.9	Impeded	Impeded
Market	NW	3.7	3.9	Impeded	Impeded
Ellis	NW	1.0	1.2	Unimpeded	Unimpeded
Ellis	NW	1.7	1.7	Unimpeded	Unimpeded
Stockton	NW	4.9	5.8	Impeded	Impeded
Powell	E	2.8	1.9	Impeded	Unimpeded
Market	NE	3.9	2.4	Impeded	Impeded
Market	SE	4.9	3.0	Impeded	Impeded
Market	SW	3.8	2.8	Impeded	Impeded
Market	NW	4.8	4.5	Impeded	Impeded
Fifth	E	0.6	0.5	Unimpeded	Unimpeded
Plaza	-	1.3	1.0	Unimpeded	Unimpeded
Powell	W	3.7	3.8	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute.

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J.

SOURCE: TJKM Transportation Consultants

TABLE V.E.13: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 2000, ALTERNATIVE 2

Location	Quadrant	Rate in P/F/M(b)		Pedestrian Flow Regime (c)	
		Noon Hour	P.M. Peak Hour	Noon Hour	P.M. Peak Hour
Sacramento	NW	4.2	3.4	Impeded	Impeded
Front	NW	1.5	1.2	Unimpeded	Unimpeded
Front	NE	2.7	1.2	Impeded	Unimpeded
Sacramento	NE	4.5	2.4	Impeded	Impeded
Sacramento	SE	2.6	2.1	Impeded	Impeded
Front	SE	5.2	2.8	Impeded	Impeded
Front	SW	6.2	6.4	Constrained	Constrained
Sacramento	SW	4.4	4.1	Impeded	Impeded
Sacramento	NW	2.8	2.2	Impeded	Impeded
Front	NW	2.8	3.3	Impeded	Impeded
Front	NE	1.9	1.8	Unimpeded	Unimpeded
Sacramento	NE	3.1	1.9	Impeded	Unimpeded
Sacramento	SE	2.5	1.5	Impeded	Unimpeded
Front	SE	4.0	3.2	Impeded	Impeded
Front	SW	2.2	2.3	Impeded	Impeded
Sacramento	SW	2.1	1.3	Impeded	Unimpeded
First	NE	2.8	5.1	Impeded	Impeded
Mission	NE	2.5	1.2	Impeded	Unimpeded
Mission	SE	1.1	8.8	Unimpeded	Constrained
First	SE	1.9	1.9	Unimpeded	Unimpeded
First	SW	2.8	3.3	Impeded	Impeded
Mission	SW	1.3	5.8	Unimpeded	Impeded
Mission	NW	2.8	4.1	Impeded	Impeded
First	NW	2.6	2.9	Impeded	Impeded
Montgomery	NE	9.1	4.7	Constrained	Impeded
Market	NW	4.7	3.1	Impeded	Impeded
Market	NE	5.0	3.2	Impeded	Impeded
New Montgomery	N	3.0	2.3	Impeded	Impeded
New Montgomery	S	3.7	2.8	Impeded	Impeded
Market	SE	3.7	4.0	Impeded	Impeded
Market	SW	2.6	3.2	Impeded	Impeded
Post	S	6.8	1.5	Constrained	Unimpeded
Post	N	4.3	1.2	Impeded	Unimpeded
Montgomery	NW	7.3	5.6	Constrained	Impeded
Sutter	NW	6.7	4.6	Constrained	Impeded
Kearny	NW	8.4	3.5	Constrained	Impeded
Kearny	NE	5.7	3.5	Impeded	Impeded
Sutter	NE	5.6	2.9	Impeded	Impeded
Sutter	SE	3.5	1.9	Impeded	Unimpeded
Kearny	SE	4.5	2.6	Impeded	Unimpeded
Kearny	SW	5.6	2.8	Impeded	Impeded
Sutter	SW	5.0	2.4	Impeded	Impeded
Geary	NW	1.7	1.6	Unimpeded	Unimpeded
Stockton	NW	4.4	4.2	Impeded	Impeded
Stockton	NE	6.0	3.9	Constrained	Impeded
Geary	NE	7.3	4.7	Constrained	Impeded
Geary	SE	4.2	3.1	Impeded	Impeded
Stockton	SE	3.1	3.2	Impeded	Impeded
Stockton	SW	7.9	7.4	Constrained	Constrained
Geary	SW	9.0	6.9	Constrained	Constrained
Stockton	NE	2.6	1.9	Impeded	Unimpeded
Market	NE	3.7	3.3	Impeded	Impeded
Market	SE	3.4	2.9	Impeded	Impeded
Fourth	SE	1.9	2.0	Unimpeded	Impeded
Fourth	SW	5.4	4.2	Impeded	Impeded
Market	SW	4.9	3.9	Impeded	Impeded
Market	NW	3.7	3.9	Impeded	Impeded
Ellis	NW	1.0	1.2	Unimpeded	Unimpeded
Ellis	NW	1.7	1.7	Unimpeded	Unimpeded
Stockton	NW	4.8	5.8	Impeded	Impeded
Powell	E	2.8	1.9	Impeded	Unimpeded
Market	NE	3.9	2.4	Impeded	Impeded
Market	SE	4.9	3.0	Impeded	Impeded
Market	SW	3.8	2.7	Impeded	Impeded
Market	NW	4.7	4.5	Impeded	Impeded
Fifth	E	0.6	0.5	Unimpeded	Unimpeded
Plaza	-	1.3	1.0	Unimpeded	Unimpeded
Powell	W	3.7	3.7	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute.

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J.

SOURCE: TJKM Transportation Consultants

TABLE V.E.14: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 2000,
ALTERNATIVE 3

Location	Quadrant	Rate in P/F/M(b)		Pedestrian Flow Regime (c)	
		Noon Hour	P.M. Peak Hour	Noon Hour	P.M. Peak Hour
Sacramento	NW	4.2	3.3	Impeded	Impeded
Front	NW	1.4	1.2	Unimpeded	Unimpeded
Front	NE	2.6	1.2	Impeded	Unimpeded
Sacramento	NE	4.4	2.4	Impeded	Impeded
Sacramento	SE	2.5	2.1	Impeded	Impeded
Front	SE	5.1	2.8	Impeded	Impeded
Front	SW	6.1	6.2	Constrained	Constrained
Sacramento	SW	4.3	4.0	Impeded	Impeded
Sacramento	NW	2.7	2.1	Impeded	Impeded
Front	NW	2.7	3.3	Impeded	Impeded
Front	NE	1.9	1.8	Unimpeded	Unimpeded
Sacramento	NE	3.0	1.9	Impeded	Unimpeded
Sacramento	SE	2.4	1.5	Impeded	Unimpeded
Front	SE	3.9	3.1	Impeded	Impeded
Front	SW	2.2	2.2	Impeded	Impeded
Sacramento	SW	2.0	1.3	Impeded	Unimpeded
First	NE	2.7	5.0	Impeded	Impeded
Mission	NE	2.4	1.2	Impeded	Unimpeded
Mission	SE	1.1	8.6	Unimpeded	Constrained
First	SE	1.8	1.8	Unimpeded	Unimpeded
First	SW	2.8	3.2	Impeded	Impeded
Mission	SW	1.2	5.7	Unimpeded	Impeded
Mission	NW	2.7	4.0	Impeded	Impeded
First	NW	2.6	2.8	Impeded	Impeded
Montgomery	NE	8.9	4.6	Constrained	Impeded
Market	NW	4.6	3.1	Impeded	Impeded
Market	NE	4.9	3.1	Impeded	Impeded
New Montgomery	N	2.9	2.3	Impeded	Impeded
New Montgomery	S	3.7	2.8	Impeded	Impeded
Market	SE	3.6	3.9	Impeded	Impeded
Market	SW	2.5	3.1	Impeded	Impeded
Post	S	6.7	1.4	Constrained	Unimpeded
Post	N	4.2	1.2	Impeded	Unimpeded
Montgomery	NW	7.2	5.5	Constrained	Impeded
Sutter	NW	6.6	4.5	Constrained	Impeded
Kearny	NW	8.2	3.4	Constrained	Impeded
Kearny	NE	5.6	3.4	Impeded	Impeded
Sutter	NE	5.4	2.9	Impeded	Impeded
Sutter	SE	3.4	1.8	Impeded	Unimpeded
Kearny	SE	4.4	2.6	Impeded	Impeded
Kearny	SW	5.4	2.8	Impeded	Impeded
Sutter	SW	4.9	2.3	Impeded	Impeded
Geary	NW	1.7	1.6	Unimpeded	Unimpeded
Stockton	NW	4.3	4.2	Impeded	Impeded
Stockton	NE	5.9	3.9	Impeded	Impeded
Geary	NE	7.2	4.7	Constrained	Impeded
Geary	SE	4.2	3.1	Impeded	Impeded
Stockton	SE	3.0	3.1	Impeded	Impeded
Stockton	SW	7.8	7.3	Constrained	Constrained
Geary	SW	8.8	6.8	Constrained	Constrained
Stockton	NE	2.6	1.9	Impeded	Unimpeded
Market	NE	3.6	3.3	Impeded	Impeded
Market	SE	3.4	2.9	Impeded	Impeded
Fourth	SE	1.8	2.0	Unimpeded	Impeded
Fourth	SW	5.3	4.1	Impeded	Impeded
Market	SW	4.9	3.9	Impeded	Impeded
Market	NW	3.7	3.8	Impeded	Impeded
Ellis	NW	1.0	1.2	Unimpeded	Unimpeded
Ellis	NW	1.7	1.7	Unimpeded	Unimpeded
Stockton	NW	4.8	5.7	Impeded	Impeded
Powell	E	2.7	1.8	Impeded	Unimpeded
Market	NE	3.8	2.3	Impeded	Impeded
Market	SE	4.8	3.0	Impeded	Impeded
Market	SW	3.7	2.7	Impeded	Impeded
Market	NW	4.7	4.4	Impeded	Impeded
Fifth	E	0.6	0.5	Unimpeded	Unimpeded
Plaza	-	1.3	1.0	Unimpeded	Unimpeded
Powell	W	3.7	3.7	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute.

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J.

SOURCE: TJKM Transportation Consultants

TABLE V.E.15: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 2000,
ALTERNATIVE 4

Location	Quadrant	Rate in P/F/M(b)		Pedestrian Flow Regime (c)	
		Noon	P.M.	Noon Hour	P.M.
		Hour	Peak Hour	Peak Hour	Peak Hour
Sacramento	NW	4.2	3.4	Impeded	Impeded
Front	NW	1.4	1.2	Unimpeded	Unimpeded
Front	NE	2.6	1.2	Impeded	Unimpeded
Sacramento	NE	4.4	2.4	Impeded	Impeded
Sacramento	SE	2.6	2.1	Impeded	Impeded
Front	SE	5.2	2.8	Impeded	Impeded
Front	SW	6.2	6.3	Constrained	Constrained
Sacramento	SW	4.3	4.1	Impeded	Impeded
Sacramento	NW	2.8	2.1	Impeded	Impeded
Front	NW	2.8	3.3	Impeded	Impeded
Front	NE	1.9	1.8	Unimpeded	Unimpeded
Sacramento	NE	3.1	1.9	Impeded	Unimpeded
Sacramento	SE	2.5	1.5	Impeded	Unimpeded
Front	SE	3.9	3.1	Impeded	Impeded
Front	SW	2.2	2.2	Impeded	Impeded
Sacramento	SW	2.0	1.3	Impeded	Unimpeded
First	NE	2.8	5.1	Impeded	Impeded
Mission	NE	2.5	1.2	Impeded	Unimpeded
Mission	SE	1.1	8.7	Unimpeded	Constrained
First	SE	1.8	1.8	Unimpeded	Unimpeded
First	SW	2.8	3.3	Impeded	Impeded
Mission	SW	1.3	5.7	Unimpeded	Impeded
Mission	NW	2.7	4.1	Impeded	Impeded
First	NW	2.6	2.9	Impeded	Impeded
Montgomery	NE	9.0	4.7	Constrained	Impeded
Market	NW	4.6	3.1	Impeded	Impeded
Market	NE	5.0	3.2	Impeded	Impeded
New Montgomery	N	2.9	2.3	Impeded	Impeded
New Montgomery	S	3.7	2.8	Impeded	Impeded
Market	SE	3.7	4.0	Impeded	Impeded
Market	SW	2.6	3.1	Impeded	Impeded
Post	S	6.8	1.5	Constrained	Unimpeded
Post	N	4.2	1.2	Impeded	Unimpeded
Montgomery	NW	7.3	5.5	Constrained	Impeded
Sutter	NW	6.7	4.6	Constrained	Impeded
Kearny	NW	8.3	3.5	Constrained	Impeded
Kearny	NE	5.7	3.5	Impeded	Impeded
Sutter	NE	5.5	2.9	Impeded	Impeded
Sutter	SE	3.4	1.8	Impeded	Unimpeded
Kearny	SE	4.5	2.6	Impeded	Impeded
Kearny	SW	5.5	2.8	Impeded	Impeded
Sutter	SW	5.0	2.4	Impeded	Impeded
Geary	NW	1.6	1.6	Unimpeded	Unimpeded
Stockton	NW	4.2	4.1	Impeded	Impeded
Stockton	NE	5.8	3.8	Impeded	Impeded
Geary	NE	7.1	4.6	Constrained	Impeded
Geary	SE	4.1	3.0	Impeded	Impeded
Stockton	SE	3.0	3.0	Impeded	Impeded
Stockton	SW	7.7	7.2	Constrained	Constrained
Geary	SW	8.8	6.7	Constrained	Constrained
Stockton	NE	2.5	1.9	Impeded	Unimpeded
Market	NE	3.6	3.2	Impeded	Impeded
Market	SE	3.3	2.8	Impeded	Impeded
Fourth	SE	1.8	2.0	Unimpeded	Impeded
Fourth	SW	5.2	4.0	Impeded	Impeded
Market	SW	4.8	3.8	Impeded	Impeded
Market	NW	3.6	3.7	Impeded	Impeded
Ellis	NW	1.0	1.1	Unimpeded	Unimpeded
Ellis	NW	1.6	1.7	Unimpeded	Unimpeded
Stockton	NW	4.7	5.6	Impeded	Impeded
Powell	E	2.7	1.8	Impeded	Unimpeded
Market	NE	3.7	2.3	Impeded	Impeded
Market	SE	4.7	2.9	Impeded	Impeded
Market	SW	3.6	2.6	Impeded	Impeded
Market	NW	4.6	4.3	Impeded	Impeded
Fifth	E	0.6	0.5	Unimpeded	Unimpeded
Plaza	-	1.2	1.0	Unimpeded	Unimpeded
Powell	W	3.6	3.6	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute.

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J.

SOURCE: TJKM Transportation Consultants

TABLE V.E.16: PEDESTRIAN ACTIVITY AT SPECIAL STUDY LOCATIONS(a), 2000, ALTERNATIVE 5

Location	Quadrant	Rate in P/F/M(b)		Pedestrian Flow Regime (c)	
		Noon Hour	P.M. Peak Hour	Noon Hour	P.M. Peak Hour
Sacramento	NW	4.2	3.3	Impeded	Impeded
Front	NW	1.4	1.2	Unimpeded	Unimpeded
Front	NE	2.6	1.2	Impeded	Unimpeded
Sacramento	NE	4.4	2.4	Impeded	Impeded
Sacramento	SE	2.5	2.1	Impeded	Impeded
Front	SE	5.1	2.8	Impeded	Impeded
Front	SW	6.1	6.2	Constrained	Constrained
Sacramento	SW	4.3	4.0	Impeded	Impeded
Sacramento	NW	2.7	2.1	Impeded	Impeded
Front	NW	2.7	3.3	Impeded	Impeded
Front	NE	1.9	1.8	Unimpeded	Unimpeded
Sacramento	NE	3.0	1.9	Impeded	Unimpeded
Sacramento	SE	2.4	1.5	Impeded	Unimpeded
Front	SE	3.9	3.1	Impeded	Impeded
Front	SW	2.2	2.2	Impeded	Impeded
Sacramento	SW	2.0	1.3	Impeded	Unimpeded
First	NE	2.7	5.0	Impeded	Impeded
Mission	NE	2.4	1.2	Impeded	Unimpeded
Mission	SE	1.1	8.6	Unimpeded	Constrained
First	SE	1.8	1.8	Unimpeded	Unimpeded
First	SW	2.8	3.2	Impeded	Impeded
Mission	SW	1.2	5.7	Unimpeded	Impeded
Mission	NW	2.7	4.0	Impeded	Impeded
First	NW	2.6	2.8	Impeded	Impeded
Montgomery	NE	8.9	4.6	Constrained	Impeded
Market	NW	4.6	3.1	Impeded	Impeded
Market	NE	4.9	3.1	Impeded	Impeded
New Montgomery	N	2.9	2.3	Impeded	Impeded
New Montgomery	S	3.7	2.8	Impeded	Impeded
Market	SE	3.6	3.9	Impeded	Impeded
Market	SW	2.5	3.1	Impeded	Impeded
Post	S	6.7	1.4	Constrained	Unimpeded
Post	N	4.2	1.2	Impeded	Unimpeded
Montgomery	NW	7.2	5.5	Constrained	Impeded
Sutter	NW	6.6	4.5	Constrained	Impeded
Kearny	NW	8.2	3.4	Constrained	Impeded
Kearny	NE	5.6	3.4	Impeded	Impeded
Sutter	NE	5.4	2.9	Impeded	Impeded
Sutter	SE	3.4	1.8	Impeded	Unimpeded
Kearny	SE	4.4	2.6	Impeded	Impeded
Kearny	SW	5.4	2.8	Impeded	Impeded
Sutter	SW	4.9	2.3	Impeded	Impeded
Geary	NW	1.6	1.6	Unimpeded	Unimpeded
Stockton	NW	4.2	4.1	Impeded	Impeded
Stockton	NE	5.8	3.8	Impeded	Impeded
Geary	NE	7.0	4.5	Constrained	Impeded
Geary	SE	4.1	3.0	Impeded	Impeded
Stockton	SE	3.0	3.0	Impeded	Impeded
Stockton	SW	7.6	7.1	Constrained	Constrained
Geary	SW	8.7	6.7	Constrained	Constrained
Stockton	NE	2.5	1.9	Impeded	Unimpeded
Market	NE	3.6	3.2	Impeded	Impeded
Market	SE	3.3	2.8	Impeded	Impeded
Fourth	SE	1.8	2.0	Unimpeded	Impeded
Fourth	SW	5.2	4.0	Impeded	Impeded
Market	SW	4.7	3.8	Impeded	Impeded
Market	NW	3.6	3.7	Impeded	Impeded
Ellis	NW	1.0	1.1	Unimpeded	Unimpeded
Ellis	NW	1.6	1.7	Unimpeded	Unimpeded
Stockton	NW	4.7	5.6	Impeded	Impeded
Powell	E	2.7	1.8	Impeded	Unimpeded
Market	NE	3.7	2.3	Impeded	Impeded
Market	SE	4.7	2.9	Impeded	Impeded
Market	SW	3.6	2.6	Impeded	Impeded
Market	NW	4.6	4.3	Impeded	Impeded
Fifth	E	0.6	0.5	Unimpeded	Unimpeded
Plaza	-	1.2	1.0	Unimpeded	Unimpeded
Powell	W	3.6	3.6	Impeded	Impeded

(a) See Figure IV.E.2 for Special Study Locations

(b) Pedestrians per foot of sidewalk width per minute.

(c) Pedestrian Flow Regimes are illustrated in Figure J.2, Appendix J.

SOURCE: TJKM Transportation Consultants

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F. COMMUNITY SERVICES

SOLID WASTE

1990

In 1990, projected annual solid waste generation for the C-3 District is about 88,000 tons (vs. 78,000 tons in 1984). The relative contribution of each subarea to the total tonnage would be nearly unchanged from 1984 (See Table V.F.1). The shift in land use mix which is expected to begin to occur in the Central South of Market area (Subarea 3) in 1984 would continue in 1990 and a similar shift would occur in the East South of Market area (Subarea 2), with industrial space declining and office space increasing (See Section V.B, Land Use and Real Estate Development). As a result of this shift in land use, the waste composition in these subareas would shift, resulting in more paper and less metals, wood crating and other industrial materials.

Disposal of the City's solid waste in 1990 has not yet been resolved. Immediately upon signing the five-year Altamont Hills landfill contract, the City began a search for an additional five million tons of landfill capacity for the years after 1988./1/ The construction of a Resource Recovery Facility, currently under consideration by the City, would reduce future needs for landfill space.

2000

In the year 2000, C-3 District solid waste generation would have increased from 1990 levels, though the amount of increase would vary by Alternative (see Table V.F.1). Alternative 1 would result in the greatest increase, to about 101,000 tons/year, up 15% from 1990. Alternative 5 would result in the smallest increase to about 94,000 tons/year, up seven percent from 1990. Between these values, Alternative 2 would rank second at about 100,000 tons/year, Alternative 3 would be next at about 98,000 tons/year and Alternative 4 would produce about 95,000 tons/year.

While each of these figures represents an increase in waste tonnage from earlier years, the rate of increase in the contribution of each subarea to the total C-3 District waste stream would be nearly constant under each Alternative. That is, the net new contribution of each subarea to the total would grow in proportion to its 1984 level.

TABLE V.F.1: C-3 DISTRICT SOLID WASTE GENERATION BY SUBAREA AND ALTERNATIVE (Tons/Year)

Subarea	1984		1990		2000 By Alternative					% Change From 1990				
	Tons/Yr.	Tons/Yr.	Tons/Yr.	% Change From 1984	Tons/Year									
					1	2	3	4	5	1	2	3	4	5
1	36,670	41,380	13		48,070	47,350	45,980	45,420	44,720	16	14	11	10	8
2	3,280	3,940	20		5,670	5,660	5,120	4,500	4,720	44	44	30	14	20
3	7,560	7,950	5		8,740	8,670	8,730	8,200	8,160	10	9	10	3	3
4	3,550	3,550	0		3,890	3,850	4,020	3,620	3,690	10	8	13	2	4
5	7,970	9,340	17		10,880	10,850	10,870	10,190	10,250	16	16	16	9	10
6	11,970	14,490	21		16,190	16,100	15,890	15,540	15,350	12	11	10	7	6
7	7,250	7,460	3		7,840	7,830	7,720	7,630	7,550	5	5	3	2	1
TOTAL	78,250	88,110	13		101,280	100,310	98,330	95,100	94,440	15	14	12	8	7

NOTE: All numbers rounded to nearest 10 tons.

SOURCE: Environmental Science Associates, Inc., and Golden Gate Disposal Company.

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The shift in land use mix in the C-3 District, which will become evident by 1984 and would increase by 1990, would continue throughout the 1990s for all five Alternatives (see Section V.B., Land Use and Real Estate Development). This shift would be most pronounced under Alternatives 1, 2 and 3, and would be reflected in higher percentages of office space and lower percentages of industrial space in Subareas 2 and 3. As a result, more paper, much of it high quality recyclable paper, and less wood, metals and other industrial wastes would be produced in the C-3 District.

As indicated in the discussion of 1990 impacts, above, disposal of San Francisco's solid waste for this period has not yet been resolved. To date, landfill capacity has been secured only through October, 1988. Any landfill site used in the year 2000 may be expected to be at least as distant as the Altamont Hills site, and possibly more distant./1/ The San Francisco County Solid Waste Management Plan calls for pursuit of additional landfill capacity, as well as an emphasis upon the building of a Resource Recovery Facility. According to the Plan, such a facility would reduce the need for future landfill capacity, encourage recycling, and produce electricity which could be sold.

POLICE

Change in Reported Incidents

Police Department information on reported incidents in 1982 by street address was used to develop a ratio of incidents per gross square foot of building space in Downtown San Francisco. Sample addresses were selectively chosen so that a crime rate could be derived for each land use category (in both an old building and a new building, where possible) in each C-3 District subarea. Appendix K lists the sample addresses, the incidents reported for each address in 1982, and the resulting annual crime rate per gross square foot of building floor area.

These crime rates were applied to the projected land use changes by subarea and by Alternative for each of the target years, 1984, 1990 and 2000. The results are shown in Table V.F.2. To put these changes into perspective, it should be noted that in Fiscal Year 1981-82 (July 1-June 30) 122,581 criminal incidents were reported citywide./2/ Based on data for Police Reporting Areas overlapping the C-3 District, it is estimated that roughly 23,000 incidents (or almost 20% of all City incidents) occurred in the C-3 District in 1982./3/

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TABLE V.F.2: PROJECTED CHANGES(a) IN REPORTED CRIMINAL INCIDENTS PER YEAR IN THE C-3 DISTRICT, BY ALTERNATIVE

Subarea	1981-84	1984-90	1990-2000 By Alternative				
			1	2	3	4	5
1	+111	+108	+184	+175	+143	+135	+106
2	+9	+43	+177	+177	+112	+57	+72
3	-1	+60	+6	+15	+4	+35	+13
4	-1	-1	+20	+21	+25	+11	+6
5	+28	+204	+386	+376	+411	+192	+265
6	+81	+310	+363	+355	+306	+282	+273
7	<u>0</u>	<u>+7</u>	<u>+6</u>	<u>+18</u>	<u>+5</u>	<u>+26</u>	<u>+15</u>
TOTAL	+227	+731	+1,142	+1,137	+1,006	+738	+750

(a) The changes shown are not cumulative. For example, the change shown in the 1984-90 column is only that which would occur between 1984 and 1990; it does not include the change which occurred between 1981 and 1984.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department.

The projected changes in incidents shown in Table V.F.2 are based on crime rates for existing land uses in the existing subareas, and therefore do not take into account any change in the "character" of a neighborhood. For example, should future development in Subareas 5 and 6 cause the indirect displacement of people likely to be involved in Part II incidents/4/, then the actual crime rates in those areas would likely be less than those shown in Table V.F.2. This effect was counterbalanced to some extent by applying the crime rates of new buildings to growing land uses, and the crime rates of old buildings to declining land uses, wherever possible. Thus, it was assumed that any new buildings in the future would have security systems similar to those in today's new buildings, and that buildings to be demolished would have crime rates similar to those of today's old buildings.

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Between 1984, the base year, and 1990 no differences are forecast among the Alternatives (see Section V.B. Land Use), therefore all Alternatives would have the same projected effects on crime rates in the C-3 District. Subareas 5 and 6 together would contribute about 70% of the projected change. In Subarea 5, the 1.8-million-gross-square-foot increase in tourist hotel space would be the target of most of the increases in crime. The increase would be primarily in commercial burglary and grand theft (theft of over \$200 in property). In Subarea 6, although office and tourist hotel uses would experience more growth, the 249,000 gross sq. ft. increase in retail space would draw most of the new crime. Theft (or shoplifting) would be the most frequent incidents.

Between 1990 and 2000, Alternative 1 would induce the largest increase in annual criminal incidents in the C-3 District, followed by Alternatives 2 and 3 (see Table V.F.2). Under Alternative 1 roughly 35% of the increase would occur in Subarea 5, the Tenderloin Subarea. Alternatives 1, 2, and 3 all would have similar increases in office and tourist hotel space in the Tenderloin Subarea (about 1.3 million gross square feet of office space and about 1.3 million gross square feet of tourist hotel space between 1990 and 2000). In all three Alternatives, these two uses together would account for about 90% of the total new floor area in Subarea 5, although for only about 80% of the projected increase in criminal incidents. Retail space, while making up only about five percent of the total new floor area in Subarea 5, would experience about 20% of the new criminal incidents. Projected development under Alternatives 1, 2, 3 and perhaps 5 would tend to make crime trends in Subarea 5 more like those which currently exist in Subarea 6. The proportion of Part II crimes (such as narcotics, vice, drunkenness or disorderly conduct) would tend to go down as the proportion of Part I crimes, particularly theft, burglary and purse snatchings, went up.

Subarea 6 itself would experience a substantial share of the new criminal incidents under all of the Alternatives. In all of the Alternatives these new incidents would be associated primarily with the new retail space, thus continuing existing crime trends in the subarea. In Alternatives 1, 2, and 3 about one-third (to retail's projected two-thirds) of the new criminal incidents. In Alternatives 4 and 5, office and tourist hotel growth would together be associated with about one-fourth (to retail's three-fourths) of the new criminal incidents.

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Subareas 3, 4, and 7 would experience comparatively little increase in crime between 1990 and 2000 under any of the Alternatives. In Subareas 3 and 4 (the Central South of Market Subarea and the South Van Ness Subarea), this is because the land uses which would be displaced, particularly industry, warehousing and parking, have much higher crime rates associated with them than do the uses which would replace them (primarily office uses). This generalization would hold for all Alternatives except Alternative 4, which would have a substantial amount (640,000 gross sq. ft.) of new housing in Subarea 3, and comparatively little displacement of industry, warehousing and parking. Subarea 7 would experience only small increases in criminal incidents (see Table V.F.2), because little new construction is projected to occur there under any of the Alternatives.

Although Subareas 1 and 2 are projected to contain about 60% of the C-3 District growth between 1990 and 2000 in all of the Alternatives, these subareas would be responsible for only 25% to 30% of the projected increase in C-3 District criminal incidents. This is because new office space, which would constitute the bulk of the growth in these two subareas, typically experiences lower crime rates (incidents per gross square foot) than do other uses (see Appendix K).

Effects on Police Department Service

It was assumed that the demand for staff time in the Field Operations Bureau (excluding the Traffic Division) and the Investigations Bureau (see Table IV.F.1) is directly related to the number of criminal incidents reported.^{5/} It was assumed that demands for Traffic Division service were related to overall traffic levels; in the C-3 District.^{6/} A comparison of changes in personnel over the past five years (1977-82) showed that of the remaining Police Department Bureaus (see Table IV.F.1), only the Support Services Bureau and about 85% of the civilian employees were affected by changes in the Field Operations and Investigations Bureaus. Personnel in the Office of the Chief and the Administration Bureau remained almost constant during large fluctuations in the other Bureaus. It was assumed, therefore, that the demand for personnel in the Support Services Bureau and for 85% of the civilian jobs was directly related to changes in demand for personnel in the Field Operations (including the Traffic Division) and Investigations Bureaus, whereas personnel in the Office of the Chief and the Administration Bureau (including about 15% of the civilian jobs) would not be affected. Table V.F.3 shows projected

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changes in demand for Police Department personnel, based on existing ratios between incidents and personnel (see Appendix K), and on the assumptions above./7/

The Police Department reported a total strength of 2,583 personnel in its 1981-82 Annual Report./2/ The greatest increase in demand for Police Department personnel (for 26 persons between 1990 and 2000 under Alternative 2) would represent no more than about a one percent increase in the Department's total strength (and even less should it grow in response to demands from the C-3 District and the rest of the City before 1990).

Table V.F.4 shows the resulting projected effects on the Police Department's operating budget should the projected personnel demands be met. It was assumed that all costs were proportional to labor costs (see Appendix K). The Police Department's operating budget for Fiscal Year 1981-82 was \$126,307,436. Similar to personnel changes discussed above, the maximum increase shown in Table V.F.4 would add no more than one percent in constant 1982 dollars to the Police Department budget. The Police Department currently has no plans for any future major capital expenditures (such as a new Police Station), nor would any be needed to meet the demands identified in Table V.F.3./8/

FIRE

Change in Fire and Non-Fire Incidents

In order to project changes in fire and non-fire /9/ incidents, incident rates for specific uses were developed based on Fire Department records for sample C-3 District addresses (see Appendix K). These incident rates were applied to the projected land use changes by Alternative for the two target years, 1990 and 2000. The results are shown in Table V.F.5./10/

Table V.F.5 shows that non-fire incidents would continue to increase more rapidly than fire incidents (see Section IV.F). The annual number of fire incidents would increase by no more than about one percent between 1984 and 2000. Because of the effectiveness of the San Francisco and State Life Safety Code provisions described in Section IV.F., fire incidents might actually decrease in some areas where older, small-scale buildings are replaced with new, fire-resistant larger-scale buildings.

TABLE V.F.3: PROJECTED CHANGES IN DEMAND FOR POLICE DEPARTMENT PERSONNEL IN THE C-3 DISTRICT, BY ALTERNATIVE

<u>Category (a)</u>	<u>1990-2000 By Alternative</u>						
	<u>1981-84</u>	<u>1984-90</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Field Operations	+2	+7	+11	+11	+10	+7	+7
Investigation	+0	+1	+2	+2	+2	+1	+1
Traffic	+0	+1	+1	+1	+1	+1	+0
Support	<u>+1</u>	<u>+4</u>	<u>+6</u>	<u>+6</u>	<u>+6</u>	<u>+4</u>	<u>+4</u>
TOTAL	+3	+13	+20	+20	+19	+13	+12

(a) The categories listed contain the following Police Department Bureaus:

Field Operations:	Field Operations Bureau excluding the Traffic Division
Investigation:	Investigation Bureau
Traffic:	Traffic Division of the Field Operations Bureau
Support:	Support Services Bureau, 85% of the Department's civilian jobs (these jobs may be filled by sworn personnel; see Note /7/)

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department.

Alternatives 1 and 2 would have the largest number of incidents in the C-3 District in the year 2000, although this total would be greater than that for Alternative 5 by only about 75 annual incidents (i.e., by only about one percent). Alternative 2, which would have more housing than Alternative 1, would have a slightly greater number of fires per year because housing was among the highest fire incident rates of all C-3 District uses (see Appendix K). Alternative 1, which would have more office space than Alternative 2, would experience more non-fire incidents, because office space has a comparatively high non-fire incident rate (see Appendix K). Similarly, Alternative 4, which would have more housing than Alternative 5, would also experience slightly more fire incidents than would Alternative 5. Alternative 4's higher rate of non-fire incidents would be due to both its housing and to its preservation of older industrial, warehousing and parking uses (see Appendix K).

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TABLE V.F.4: PROJECTED CHANGES IN POLICE DEPARTMENT BUDGETS NECESSARY TO SERVE THE C-3 DISTRICT, BY ALTERNATIVE

Budget Category (a)	Change in Department Annual Budget (1982 Dollars)						
	1981-84	1984-90	1	1990-2000 By Alternative			
				2	3	4	5
Labor	136,500	591,500	910,000	910,000	864,500	591,500	546,000
Expenses	7,200	31,200	48,000	48,000	45,600	31,200	28,800
Equipment	2,100	9,100	14,000	14,000	13,300	9,100	8,400
Programs	900	3,800	5,800	5,800	5,500	3,800	3,500
TOTAL	146,700	635,600	977,800	977,800	928,900	635,600	586,700

(a) The categories listed contain the following Police Department Budget categories:

Labor: Total Labor Costs, including Police Salaries, Civilian Salaries and Fringe Benefits

Expenses: Contractual Services, Current Expenses, Services of other Departments

Equipment: Equipment and Supplies

Programs: Special Programs, including Crime Prevention and Education, the Senior Escort Program and Community Relations Programs

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department.

Effects on Fire Department Service

Based on existing data, average service hours required for C-3 District fire incidents and non-fire incidents were derived for each task unit (Division Chiefs, Battalion Chiefs, Engine Companies, Truck Companies and Rescue Squads) responding to these incidents (see Appendix K). These service-hour factors take the following into account: 1) that different types of units spend differing amounts of time at incidents, 2) that non-fire incidents generally require less service time per incident than do fire incidents; and 3) that some incidents are responded to by several units at a time while others receive

TABLE V.F.5: PROJECTED ANNUAL FIRE AND NON-FIRE INCIDENTS IN THE C-3 DISTRICT, BY ALTERNATIVE

<u>Annual Incidents</u>	<u>1984</u>	<u>1990</u>	<u>2000 By Alternative</u>				
			<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Fire	1,283	1,290	1,297	1,300	1,297	1,300	1,295
Non-Fire	<u>6,354</u>	<u>6,445</u>	<u>6,595</u>	<u>6,592</u>	<u>6,568</u>	<u>6,531</u>	<u>6,522</u>
Total	7,637	7,735	7,892	7,892	7,865	7,831	7,817
<u>Percent Change (a)</u>							
Fire	-	+0.5%	+0.5%	+0.8%	+0.5%	+0.8%	+0.4%
Non-Fire	-	+1.4%	+2.3%	+2.3%	+1.9%	+1.3%	+1.2%
Total	-	+1.3%	+2.0%	+2.0%	+1.7%	+1.2%	+1.1%

(a) Percent changes shown under 1990 represents the percent increases between 1984 and 1990. Those shown for the Alternatives represent the percent increases between 1990 and 2000.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

the response of only one unit. Table V.F.6 shows the resulting projected changes in annual service-hours for each type of task unit responding to the incidents shown in Table V.F.5. Table V.F.6 also shows the effects of adding all of the projected new service-hour demands to those units which currently spend the most time serving the C-3 District. This is a worst-case assumption, since it is likely that the new service-hour demands would be spread among all units responding to calls in the C-3 District (see Table IV.F.3).

Table V.F.6 indicates that all of the units which spend the most time in the C-3 District already work more annual service hours than do the average City units. Engine Company 1 puts in almost twice as many service hours annually as does the City's average engine company. Under the worst-case assumption that all new demands for engine company time in the C-3 District would be met by Engine Co. 1 alone, this unit would also experience the largest increase in service hours of the units shown in Table V.F.6.

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TABLE V.F.6: PROJECTED ANNUAL FIRE DEPARTMENT SERVICE-HOUR DEMANDS IN THE C-3 DISTRICT, BY ALTERNATIVE

Task Unit Category	Existing Avg. Service Hours/Year(a)	Increase in C-3 District Service-Hour Demands					
		1984 to 1990	1990-2000 By Alternative				
			<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Division	231	1.7	2.5	2.7	2.1	1.8	1.4
Battalion	250	4.2	6.2	6.6	5.3	4.5	3.4
Engine Co.	289	13.4	20.1	17.8	17.1	14.1	10.9
Truck Co.	260	7.3	11.1	9.6	9.3	7.7	6.1
Rescue Co.	370	3.7	5.8	4.2	4.8	3.6	3.1

Total Service Hours(b), By Unit, If All New C-3 District Demands Met By Nearest Units

Units Nearest to C-3 District	2000 By Alternative						
	<u>1984</u>	<u>1990</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Division 1	281	283	285	286	285	285	284
Battalion 3	295	299	305	305	304	303	302
Engine Co. 1	544	557	577	575	574	571	568
Truck Co. 1	427	434	446	444	444	442	441
Rescue Co. 1	502	506	511	510	510	509	509

(a) 1982 average for all units in the City in each category.

(b) Rounded to the nearest hour.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

According to the Fire Department /11/, 675 annual service hours is the threshold for new service; at this level an engine company, would be unable to adequately serve its area. Therefore, at about 577 annual service hours in the year 2000 (Alternative 1), Engine Company 1 would be working at about 85% of its maximum capacity. It would continue to be one of the busiest units in the City, but no new service would be required. The other units shown in Table V.F.6 would also continue to work more service hours than would the City's average units (particularly Rescue Co. 1 and Truck Co. 1), but none of these units would approach or exceed their annual service hour limits./11/,/12/

V. Environmental Impact

As units serving the Downtown spend more time responding to C-3 District calls, units in outlying areas could spend more time acting as back-up units for C-3 District calls. Because the projected service-hour increases shown in Table V.F.6 are small (i.e., by no more than six percent in 1984 and 2000), and because units in outlying areas are currently well below their service-hour maximums, the effect on response time to outlying areas is likely to be negligible./13/

Although the nature of calls for service to the C-3 District would continue its ongoing shift away from fire incidents and toward non-fire incidents, the Fire Department has indicated that no new equipment or specialized staff would be needed./14/

The projected growth in building space between 1984 and 2000 would require Fire Department to hire additional building inspectors, in order to maintain annual inspections of all Downtown high-rises. The Department currently has 32 inspectors./15/ Table V.F.7 shows the additional inspectors needed, and the total cost to the Department. The costs shown are labor costs (salaries plus fringe benefits) only. The Fire Department has indicated that no new equipment or administrative personnel would be required to support the additional inspectors./14/

The Auxiliary Water Supply System, commonly termed the high-pressure system, is used exclusively for firefighting purposes and augments the domestic water supply as an additional means of ensuring water availability in the event of a fire. The high-pressure system is distributed throughout the C-3 study area, and would not be adversely affected by projected development under any of the Alternatives./14/

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TABLE V.F.7: PROJECTED ANNUAL FIRE INSPECTION SERVICE IN THE C-3 DISTRICT, BY ALTERNATIVE

	1990 - 2000 By Alternative					
	1984 - 1990	1	2	3	4	5
Additional Personnel (a)	2	1	1	0	0	0
Additional Costs (1981 - 82 Dollars)	\$118,930	\$59,470	\$59,470	\$0	\$0	\$0

- (a) These calculations are based on Gruen Gruen + Associates, March 1981, Fiscal Impacts of New Downtown High-Rises, which found that each inspector serviced an average of about 16 million sq. ft. of building space. They also assumed that, to reasonably maintain current service levels, the first additional inspector would be hired when an additional 50% of the average amount of space assigned per inspector was constructed, and each inspector thereafter hired when additional space was constructed which exceeded the average workload by 10%.

SOURCE: Environmental Science Associates, Inc., based on information from Gruen Gruen + Associates and the San Francisco Fire Department.

NOTES - Community Services

- /1/ City and County of San Francisco, September 8, 1982, San Francisco County Solid Waste Management Plan, Final Draft, pp. 177-179.
- /2/ San Francisco Police Department, September 3, 1982, Annual Report, 1981-82.
- /3/ This estimate is very rough (i.e., correct only to about the nearest 1,000 incidents), because Reporting Area boundaries and C-3 District boundaries do not coincide.
- /4/ Part I crimes: homicide, forcible rape, strong-arm robbery, armed robbery, aggravated assault, burglary, grand theft (over \$200), petty theft, auto theft, purse snatching.

Part II crimes: non-aggravated assault, arson, forgery and counterfeiting, fraud and embezzlement, receiving stolen property, carrying weapons, sex offenses (except rape), narcotics, gambling, offenses against family and child, malicious mischief, violation of liquor laws, disorderly conduct, drunkenness, drunk driving, traffic violations, other miscellaneous crimes.

- /5/ It should be noted here that a comparison of staffing levels in these Bureaus with changes in reported criminal incidents citywide over the five years 1977-1982 showed almost no correlation. The reasons are that between 1977 and 1979 staff was reduced in response to Proposition 13 funding constraints, while total reported incidents showed a gradual increase. A 1979 Federal Consent Decree (Federal Consent Decree Settlement (1979) of the suit by Officers for Justice et al., versus the San Francisco

V. Environmental Impact

Civil Service Commission), intended to remedy the situation by mandating that the Department increase staffing levels to a required minimum; the number of personnel for 1980-81, therefore, increased substantially over that for 1979, although there was only a slight increase in reported incidents for that period. This situation indicates that although demand for police time may be affected by criminal incidents, the supply of personnel may be controlled by other factors. Therefore, all discussion of personnel impacts in this section should be interpreted as impacts upon demand for personnel.

- /6/ Traffic levels were assumed to be directly related to the amount of building space in the C-3 District. These assumptions, and the relationship between gross square feet of building space and Traffic Division staff, are from Gruen Gruen + Associates, March 1981, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, pp. 32-37 (also see Appendix K).
- /7/ In order to help attain and maintain the number of sworn officers required by the 1979 Federal Consent Decree (see Note /5/), the Department is currently (1983) filling some of the opening civilian positions with sworn personnel. This policy is likely to continue into the future. Therefore, although the number of "civilian positions" in the Department could increase in the future (see Table V.F.3), the actual number of civilian employees could remain constant or go down, as they are replaced by sworn personnel. Sergeant James Farrell, Planning and Research Division, San Francisco Police Department, telephone conversation, April 27, 1983.
- /8/ Michael F. Lennon, Jr., Captain of Police, Commanding Officer, Planning and Research Division, San Francisco Police Departments, personal interview, March 29, 1983.
- /9/ Non-fire incidents include: false alarms; rescue calls (resuscitation, first aid, person(s) trapped in elevators or autos, landslides, aircraft incidents and drownings); overpressure calls (steam pipe ruptures, gas pipe ruptures, water heater ruptures); hazard calls (gas/oil spillage, explosives removal, downed power lines, electric short circuits, natural gas leaks, building collapses); service calls (lock out/lock in, water removal, animal rescue, assist police, broken hydrants, sinking boats, broken sprinklers); and other miscellaneous incidents.
- /10/ Projected changes in annual incidents were not broken out by subarea for two reasons: 1) it was found that incident rates were much more dependent on building type, use and floor area than on building location; and 2) projected changes in annual incidents for some subareas were so small as to be within the estimated margin of error for analysis.
- /11/ Robert Rose, Deputy Chief, Support Services, San Francisco Fire Department, telephone conversation, April 12, 1983. This service threshold confirms that identified in the Gruen Gruen + Associates, 1981, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco.
- /12/ It should be noted here that this analysis does not consider the effects of any growth outside of the C-3 District. Many of the units which serve the C-3 District also serve portions of the South-of-Market area, south of Folsom Street. Future growth in this area, combined with that projected for the C-3 District, could require new service (most likely an Engine Company) as C-3 District units become more busy.

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- /13/ According to Robert Rose, Deputy Chief, Support Services, San Francisco Fire Department, memorandum dated March 25, 1983, "Service to outlying of adjacent areas would not be impaired as a result of development of any of the five alternatives."
- /14/ Robert Rose, Deputy Chief, Support Services, San Francisco Fire Department, memorandum dated March 25, 1983.
- /15/ In fiscal year 1981-82, based on San Francisco Fire Department, July 24, 1982, 1981-82 Annual Report. No additional inspectors would be needed between 1981 and 1984.

G. FISCAL FACTORS

INTRODUCTION

Scope of Analysis

This section evaluates the effects on City revenues and expenditures that would result from changes in space and activity in the C-3 District. The analysis concentrates on identifying the additional revenues and costs arising from additional space and activity./1/

This fiscal analysis addresses two questions:

- Would additional space and activity in the C-3 District increase City costs more than City revenues?
- Would differences in the Alternatives affect the balance between increased costs and increased revenues?

The analysis is principally concerned with the direct effects of C-3 District growth on City finances. The direct effects on revenues are those changes in revenues that result from changes in space and economic activity that occur in the C-3 District. The direct effects on expenditures are those changes in public service costs that result from changes in the demand for City services provided within the C-3 District.

This study considers the City revenues and costs which are likely to be affected most directly by changes in space and activity. The comparison of these revenues and costs shows whether revenues from the City's major sources of local revenue would be sufficient to pay the costs for the services most directly affected by growth in the C-3 District.

As described in an earlier section (see Section IV.G, Fiscal Setting), the C-3 District may have indirect effects on City finances. These indirect effects are hard to identify, however, due to the difficulties of tracing the influences of the downtown on other areas of the City and of specifying which impacts are a consequence of additional downtown

growth and which are a result of other factors. For these reasons, the indirect fiscal effects of future changes in space and activity in the C-3 District are not quantified here. Although this section primarily addresses the direct effects of C-3 District growth on City finances, indirect effects are likely. Some of the implications of indirect effects are considered in evaluating the conclusions regarding fiscal impacts.

Assumptions

Any fiscal analysis requires that certain assumptions be made regarding service standards, tax law, inflation, and other factors. Many of the assumptions that bear on the forecasts of individual revenues and costs are described in detail elsewhere. (See Appendix L for the methodologies used to forecast revenues and Muni costs. Refer to Section V.F and Appendix K for the methodologies used to forecast police and fire costs.) There are some assumptions that apply generally, however, and these are summarized below:

- Both revenues and expenditures are stated in 1982 dollars.
- Service standards would be maintained at current levels. The forecasts of service expenditures assume the present quality of City services provided to the C-3 District would be available to future changes in space and activity.
- Laws and ordinances that affect tax rates and revenue distributions would remain unchanged. It is assumed the tax laws in effect in 1982-83 would apply to future years.
- Only the effects on the finances of the City and County of San Francisco are considered. The fiscal impacts on other public agencies, such as the San Francisco Unified School District and BART, have not been estimated.

The importance of these and other assumptions to the conclusions of the fiscal analysis is discussed later.

Organization

Separate subsections are devoted to the discussion of revenues and expenditures. These subsections are followed by a comparison of the revenues and costs, and an analysis of the implications for City finances.

CHANGES IN CITY REVENUES

This subsection presents the forecasts of additional City revenues in 1990 and 2000, by Alternative, that would result from changes in space and activity in the C-3 District that occur between 1984 and 2000. Forecasts have been prepared of general fund and special fund revenues that would accrue from six revenue sources: the property tax, payroll/business tax, sales tax, hotel tax, utility users tax, and franchise tax. These taxes constitute the City's most important sources of locally-controlled revenue. Together, the six taxes accounted for 96 percent of the City's revenues from local taxes in 1981-82, and 40 percent of all general government revenues collected by the City in that year./2/

This subsection also presents forecasts of additional revenue from the City's transit impact development fee. The fee provides revenue to finance Muni services affected by downtown office development. Muni revenues from transit fares are considered in the following subsection on service costs.

Detailed descriptions of the methodologies used to forecast the changes in City revenue from the C-3 District, as well as tables providing supplementary information, can be found in Appendix L.

General Fund Revenue

The estimates of additional general fund revenue from changes in space and activity in the C-3 District are shown in Tables V.G.1 and V.G.2. Table V.G.1 shows the additional revenue in 1990 from changes in space and activity that would occur between 1984 and 1990, and the additional revenue in 2000, by Alternative, from changes in space and activity that would occur between 1990 and 2000. The figures for 2000 in Table V.G.1 include only the additional revenues that result from changes between 1990 and 2000, thus separating the effects of the Alternatives from the changes that would occur before 1990. Table V.G.2 shows additional revenues in 2000 from changes in space and activity over the entire 1984-2000 period. This table combines the revenue effects of the Alternatives with the revenue effects due to changes in space and activity between 1984 and 1990.

1984-1990

Changes in space and activity that occur in the C-3 District between 1984 and 1990 would result in an additional \$40.2 million in City general fund revenue in 1990 (in 1982 dollars). Revenues from the property tax would make up the largest portion of the increased revenues, accounting for about 55 percent of the total increase. The payroll/business tax would represent the next largest revenue source, accounting for about 27 percent of the total increase. The remaining portion of increased revenues would be divided among the sales tax (8 percent of the increase), hotel tax (5 percent), utility users tax (4 percent), and franchise tax (less than 1 percent).

The additional \$40.2 million in revenue in 1990 from these six sources would represent about 11 percent of the total general fund revenues collected citywide from these same revenue sources in 1981-82. The additional revenue would represent about 5 percent of the citywide general fund revenues collected from all sources in 1981-82./3/

TABLE V.G.1: ADDITIONAL CITY GENERAL FUND REVENUES FROM C-3 DISTRICT IN 1990 AND 2000,
DUE TO CHANGES IN SPACE AND ACTIVITY 1984-1990 AND 1990-2000
(Millions of 1982 Dollars) (a)

Revenue Source	Additional Revenue In 1990 From Change In Space And Activity 1984-1990	Additional Revenue In 2000 From Change In Space And Activity 1990-2000, By Alternative				
		1	2	3	4	5
Property Tax (b)	\$22.06	\$28.40	\$28.57	\$24.07	\$18.97	\$16.62
Payroll/Business Tax	10.91	16.95	16.22	15.34	13.00	13.28
Sales Tax (c)	3.38	5.65	5.49	5.24	4.45	4.51
Hotel Tax (d)	2.04	3.90	3.90	3.90	3.54	3.54
Utility Users Tax	1.52	2.18	2.00	1.71	1.13	1.11
Franchise Tax	.29	.42	.38	.33	.22	.21
TOTAL	\$40.19	\$57.48	\$56.56	\$50.59	\$41.30	\$39.27

NOTE: Figures may not add to totals due to independent rounding.

- (a) This table shows additional City general fund revenue in 1990 from changes in space and activity in the C-3 District that occur between 1984 and 1990, and the additional general fund revenue in 2000, for by Alternative, from changes in space and activity that occur between 1990 and 2000. The figures for 2000 do not include the general fund revenue from additional space and activity during the 1984-1990 period. The total additional general fund revenue in 2000 from increased space and activity during 1984-1990 and 1990-2000 is shown in Table V.G.2. For detailed information on the forecasts of individual revenue sources, refer to Appendix L.
- (b) Consists only of general property tax revenues for the City and County of San Francisco. Property taxes levied to retire voter-approved bonded indebtedness are not included.

TABLE V.G.1: ADDITIONAL CITY GENERAL FUND REVENUES FROM C-3 DISTRICT IN 1990 AND 2000,
DUE TO CHANGES IN SPACE AND ACTIVITY 1984-1990 AND 1990-2000
(Millions of 1982 Dollars) (a) (Continued)

- (c) Excludes the portion of sales tax revenues allocated to Muni (refer to Tables V.G.3 and V.G.4 for estimates of TDA revenue for Muni).
- (d) Excludes the portion of hotel tax revenues allocated to the hotel tax fund (refer to Tables V.G.3 and V.G.4, for estimates of revenues for the hotel tax fund).

SOURCE: Recht Hausrath & Associates

TABLE V.G.2: ADDITIONAL CITY GENERAL FUND REVENUES FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN SPACE AND ACTIVITY 1984-2000 (Millions of 1982 Dollars) (a)

Revenue Source	Additional Revenue In 2000 From Change In Space And Activity 1984-2000, By Alternative (b)				
	1	2	3	4	5
Property Tax (c)	\$41.63	\$41.81	\$37.31	\$32.21	\$29.86
Payroll/Business Tax	27.85	27.13	26.25	23.91	24.19
Sales Tax (d)	9.03	8.86	8.62	7.83	7.88
Hotel Tax (e)	5.93	5.93	5.93	5.57	5.57
Utility Users Tax	3.85	3.68	3.39	2.81	2.79
Franchise Tax	.74	.71	.65	.54	.54
TOTAL	\$89.04	\$88.12	\$82.15	\$72.86	\$70.83

NOTE: Figures may not add to totals due to independent rounding.

- (a) This table shows additional City general fund revenue in 2000, by Alternative, from changes in space and activity in the C-3 District that occur between 1984 and 2000. Additional general fund revenue in 1990 from increased space and activity that occur during 1984-1990, and additional general fund revenue in 2000 from increased space and activity that occur during 1990-2000, are shown in Table V.G.1. For detailed information on the forecasts of individual revenue sources, refer to Appendix L.
- (b) The estimates of property tax, utility users tax, and franchise tax shown in this table are not the simple sum of the 1990 and 2000 estimates from the previous table (Table V.G.1). Refer to Appendix L (Tables L.9, L.31, and L.34) for further explanation.

TABLE V.G.2: ADDITIONAL CITY GENERAL FUND REVENUES FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN SPACE AND ACTIVITY 1984-2000 (Millions of 1982 Dollars) (a) (Continued)

- (d) Consists only of general property tax revenues for the City and County of San Francisco. Property taxes levied to retire voter-approved bonded indebtedness are not included.
- (e) Excludes the portion of sales tax revenues allocated to Muni (refer to Tables V.G.3 and V.G.4 for estimates of TDA revenue for Muni).
- (f) Excludes the portion of hotel tax revenues allocated to the hotel tax fund (refer to Tables V.G.3 and V.G.4, for estimates of revenues for the hotel tax fund).

SOURCE: Recht Hausrath & Associates

1990-2000

The amount of additional general fund revenue in 2000 due to changes in space and activity that occur between 1990 and 2000 would vary by Alternative. The additional revenue in 2000 would range from \$39.3 million in Alternative 5 to \$57.5 million in Alternative 1 (in 1982 dollars). Alternatives 1 and 2 would result in similar amounts of increased revenue, as would Alternatives 4 and 5. The increased revenues from Alternative 3 would be closer to the amounts for Alternative 1 and 2 than the amounts for Alternatives 4 and 5.

For all Alternatives, the property tax would represent the largest single source of increased revenue in 2000, followed by the payroll/business tax. Together, property taxes and payroll/business taxes would account for over three-quarters of the total increased revenues in 2000, for all Alternatives.

1984-2000

The additional general fund revenue in 2000 from changes in space and activity over the entire 1984-2000 period is shown in Table V.G.2. The increased revenues would range from \$70.8 million with Alternative 5 to \$89 million with Alternative 1 (in 1982 dollars). Alternatives 1 and 2 would result in similar amounts of increased revenue, as would Alternatives 4 and 5. A difference of about \$1 million in revenues would exist between Alternatives 1 and 2; a difference of about \$2 million would exist between Alternatives 4 and 5. The amount of increased revenues with Alternative 3 would fall between the amounts from Alternatives 2 and 4, being more similar to Alternative 2.

Although still the largest single source of revenue, the property tax would represent a smaller share of total increased revenues in 2000 than in 1990. This would be due to several factors. First, the property tax revenues from the additions of space during the 1984-1990 period would decline in real value between 1990 and 2000, while other revenues from changes during the 1984-1990 period would at least maintain their

value in 1982 dollars./4/ Second, the increase in assessed value (the basis for increases in property tax revenues) between 1990 and 2000 due to growth during that period would be smaller in percentage terms than the increase in employment and sales (which determine increases in revenues from the payroll/business tax and sales tax). Thus, revenues from the property tax would decline in relative importance by 2000 as revenues from the payroll/business tax and sales tax increase in importance. The changes in the relative shares of total revenues would be very small, however.

This small drop in the relative importance of the property tax would vary slightly among the Alternatives. Property tax revenues would represent a smaller share of total increased revenues with Alternatives 4 and 5 than with the other Alternatives. This is because the difference in increased employment, sales, and hotel rooms (which affect hotel taxes) between Alternatives 4 and 5 and the other Alternatives would be smaller than the difference in total increased space (and assessed value). Thus, revenues from the payroll/business tax, sales tax, and hotel tax would account for a larger share of total revenues with Alternatives 4 and 5, and property taxes would account for a smaller share, when compared to the other Alternatives. The differences would be slight, however, and property taxes would still represent the largest single source of increased revenues for all Alternatives.

The additional general fund revenues from these six sources in 2000 would represent 19-24 percent of the general fund revenues collected citywide from these same sources in 1981-82. The additional revenue would represent about 10-12 percent of citywide general fund revenues collected from all sources in 1981-82./5/

Special Fund Revenue

Not all increased revenues from the sales tax and hotel tax would go to the City's general fund. Some revenues would be allocated for special funds that could be used only for specific purposes. A portion of

increased sales taxes would accrue to Muni for transit-related purposes. The allocation of this share of the sales tax is authorized by the state Transportation Development Act (TDA).^{6/} A portion of increased hotel taxes would accrue to the City's hotel tax fund. The proceeds of this fund are used to finance the construction and maintenance of Moscone Center, improvements to Candlestick Park, the maintenance of Brooks Hall, Civic Auditorium, and the War Memorial buildings, the provision of low income housing in Yerba Buena Center, and the support of neighborhood arts programs.

Tables V.G.3 and V.G.4 show the estimates of increased revenues for these two special funds. The tables follow the same format used in Tables V.G.1 and V.G.2.

1984-1990

Increased revenues in 1990 for the two special funds would amount to about \$5 million (in 1982 dollars). The revenues for the hotel tax fund would make up the largest portion of this total increase. The increased revenues for the hotel tax fund would be about \$4.3 million, and the increased TDA revenues for Muni would be about \$0.7 million.

1990-2000

The amount of increased special fund revenue in 2000 due to changes in space and activity that occur between 1990 and 2000 would vary by Alternative. The total increased revenues for the two special funds would be about \$8.5 million for Alternatives 4 and 5, and about \$9.4-9.5 million for Alternatives 1, 2, and 3 (in 1982 dollars). The revenues for the hotel tax fund would be about \$7.5 million for Alternatives 4 and 5, and about \$8.3 million for Alternatives 1, 2, and 3. The increased TDA revenues for Muni would be roughly similar among Alternatives, ranging from about \$1 million for Alternatives 4 and 5 to \$1.2 million for Alternative 1.

TABLE V.G.3: SELECTED SPECIAL FUND REVENUE FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN SPACE AND ACTIVITY 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

Revenue Fund	Additional Revenue In 1990 From Change In Space And Activity 1984-1990	Additional Revenue In 2000 From Change In Space And Activity 1990-2000, By Alternative				
		1	2	3	4	5
Hotel Tax Fund (b)	\$4.33	\$8.28	\$8.28	\$8.28	\$7.52	\$7.52
TDA Revenue for Muni (c)	.74	1.23	1.19	1.14	.97	.98
TOTAL	\$5.06	\$9.51	\$9.47	\$9.42	\$8.49	\$8.50

NOTE: Figures may not add to totals due to independent rounding.

- (a) This table shows additional special fund revenue in 1990 from changes in space and activity in the C-3 District that occur between 1984 and 1990, and the additional special fund revenue in 2000, by Alternative, from changes in space and activity that occur between 1990 and 2000. The figures for 2000 do not include the special fund revenue from additional space and activity during the 1984-1990 period. The additional special fund revenue in 2000 from increased space and activity during 1984-1990 and 1990-2000 is shown in Table V.G.4. For detailed information on the forecasts of individual revenue sources, refer to Appendix L.
- (b) Excludes the portion of hotel tax revenues allocated to the general fund (refer to Tables V.G.1 and V.G.2 for estimates of revenues for the general fund).
- (c) A portion of sales tax revenues generated by sales in San Francisco is allocated to Muni transit operations, as authorized by the state Transportation Development Act (TDA). This revenue would be in addition to the general fund sales tax revenue shown in Tables V.G.1 and V.G.2.

SOURCE: Recht Hausrath & Associates

TABLE V.G.4: SELECTED SPECIAL FUND REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN SPACE AND ACTIVITY 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

Revenue Fund	Additional Revenue In 2000 From Change In Space And Activity 1984-2000, By Alternative				
	1	2	3	4	5
Hotel Tax Fund (b)	\$12.61	\$12.61	\$12.61	\$11.84	\$11.84
TDA Revenue for Muni (c)	1.96	1.93	1.88	1.70	1.72
TOTAL	\$14.57	\$14.53	\$14.48	\$13.55	\$13.56

NOTE: Figures may not add to totals due to independent rounding.

- (a) This table shows additional special fund revenue in 2000, by Alternative, from changes in space and activity in the C-3 District that occur between 1984 and 2000. Additional special fund revenue in 1990 from increased space and activity that occur during 1984-1990, and additional special fund revenue in 2000 from increased space and activity that occur during 1990-2000, are shown in Table V.G.3. For detailed information on the forecasts of individual revenue sources, refer to Appendix L.
- (b) Excludes the portion of hotel tax revenues allocated to the general fund (refer to Tables V.G.1 and V.G.2 for estimates of revenues for the general fund).
- (c) A portion of sales tax revenues generated by sales in San Francisco is allocated to Muni transit operations, as authorized by the state Transportation Development Act (TDA). This revenue would be in addition to the general fund sales tax revenue shown in Tables V.G.1 and V.G.2.

SOURCE: Recht Hausrath & Associates

1984-2000

The additional special fund revenue in 2000 due to changes in space and activity over the entire 1984-2000 period would range from about \$13.6 million with Alternatives 4 and 5 to about \$14.6 million with Alternative 1 (in 1982 dollars). The increased revenues for the hotel tax fund would be about \$11.8 million with Alternatives 4 and 5 and about \$12.6 million with Alternatives 1, 2, and 3. The increased TDA revenues for Muni would be about \$1.7 million with Alternatives 4 and 5, about \$1.9 million with Alternatives 2 and 3, and about \$2 million with Alternative 1.

Transit Impact Development Fee

The transit impact development fee is levied on the developers of new office space in the downtown area to finance the costs of Muni service that increase as a consequence of office development./7/ The fee is intended to recover the costs of the additional Muni service needed to accommodate peak-period transit demand associated with new office development. The proceeds of the fee can be used for capital and operating expenditures incurred by Muni in meeting this additional transit demand./8/

The fee is \$5 per sq. ft. of office space added to the downtown area./9/ It is assumed the revenue from the fee would be treated as an annuity paying a steady income over the useful life of the new office space. The annual proceeds from the annuity would depend on the interest earned by the City on invested funds. It is assumed the average interest rate would equal the average rate of inflation between 1984 and 2000./10/

The transit impact development fee is presently under court challenge. Revenues from the fee collect in an impound fund until the legal challenge is resolved.

Tables V.G.5 and V.G.6 show estimates of the additional transit impact development fees that would result from changes in office space in the C-3 District. The tables show the total proceeds from the fee and the annual revenue that would result from treating the proceeds as an annuity. The total proceeds represent the total transit fee revenue (in 1982 dollars) collected from office development occurring during each interval: 1984-1990, 1990-2000, 1984-2000. The annualized revenues are the revenues that would be available in 1990 and 2000 (in 1982 dollars) from an annuity established with the total proceeds from the fee. It was assumed the annuity would provide equal annual revenues over 45 years from the total fee levied on each office building added in the C-3 District.

1984-1990

Office space added between 1984 and 1990 would result in \$36.7 million in total proceeds from the transit impact development fee as shown in Table V.G.5. Annualized over the useful life of the new office space, the fees would generate about \$.8 million in 1990.

1990-2000

The amount of transit fee revenue from office space added between 1990 and 2000 would vary by Alternative (see Table V.G.5). Total proceeds from the fee would range from \$13.8 million with Alternative 4 to \$32 million with Alternative 1. Annualized revenues would range from about \$.3 million with Alternative 4 to about \$.7 million with Alternative 1. Alternatives 1 and 2 would result in fairly similar amounts, as would Alternatives 4 and 5. The revenues from Alternative 3 would be closer to the amounts for Alternative 1 and 2 than the amounts for Alternatives 4 and 5.

1984-2000

The transit fee revenue from office space added over the entire 1984-2000 period is shown in Table V.G.6. The total proceeds for the fee would range from about \$50.5 million with Alternative 4 to \$68.7

TABLE V.G.5: ADDITIONAL TRANSIT IMPACT DEVELOPMENT FEE REVENUES FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN OFFICE SPACE, 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

Transit Impact Development Fee (b)	Additional Revenue In 1990 From Change In Space 1984-1990 (c)	Additional Revenue in 2000 From Change In Space 1990-2000, By Alternative (c)				
		1	2	3	4	5
Total Proceeds (d)	\$36.70	\$32.03	\$29.48	\$25.84	\$13.76	\$14.63
Proceeds Annualized Over Life of Space (e)	.82	.71	.66	.57	.31	.33

(a) This table shows additional revenue from the transit impact development fee in 1990 from changes in office space in the C-3 District that occur between 1984 and 1990, and the additional transit fee revenue in 2000 by Alternative, from changes in office space that occur between 1990 and 2000. The figures for 2000 do not include the transit fees from changes in office space during the 1984-1990 period. The total additional transit fees in 2000 from increased office space during 1984-1990 and 1990-2000 are shown in Table V.G.6.

(b) The transit impact development fee is presently under court challenge. The outcome of the challenge is uncertain.

(c) Assumes the present maximum fee (\$5 per sq. ft.) is not increased, and inflation averages 8 percent per year over the analysis period. It was also assumed that once the fee is received, it would be invested at an interest rate equal to the rate of inflation.

(d) Total proceeds are the total transit fee revenue collected from office development occurring during each interval.

(e) Assumes the useful economic life of an office building is 45 years, based on the criteria of the U.S. Internal Revenue Service. Therefore, the annualized revenues are the total proceeds divided by 45.

SOURCE: Recht Hausrath & Associates

TABLE V.G.6: ADDITIONAL TRANSIT IMPACT DEVELOPMENT FEE REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN OFFICE SPACE, 1984-2000 (Millions of 1982 Dollars) (a)

Transit Impact Development Fee (b)	Additional Revenue in 2000 From Changes In Space 1984-2000, By Alternative (c)				
	1	2	3	4	5
Total Proceeds (d)	\$68.73	\$66.18	\$62.54	\$50.46	\$51.33
Proceeds Annualized Over Life of Space (e)	1.53	1.47	1.39	1.12	1.14

(a) This table shows additional revenue from the transit impact development fee in 2000, by Alternative, from changes in office space in the C-3 District that occur between 1984 and 2000. Additional transit fee revenue in 1990 from office space added during 1984-1990, and additional transit fees in 2000 from office space added during 1990-2000, are shown in Table V.G.5.

(b) The transit impact development fee is presently under court challenge. The outcome of the challenge is uncertain.

(c) Assumes the present maximum fee (\$5 per sq. ft.) is not increased, and inflation averages 8 percent per year over the analysis period. It was also assumed that once the fee is received, it would be invested at an interest rate equal to the rate of inflation.

(d) Total proceeds are the total transit fee revenue collected from office development occurring during each interval.

(e) Assumes the useful economic life of an office building is 45 years, based on the criteria of the U.S. Internal Revenue Service. Therefore, the annualized revenues are the total proceeds divided by 45.

SOURCE: Recht Hausrath & Associates

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million with Alternative 1. Annualized revenues would range from \$1.1 million with Alternative 4 to about \$1.5 million with Alternative 1. The amounts with Alternatives 1 and 2 would be similar, as would the amounts with Alternatives 4 and 5. The revenues from Alternative 3 would fall between the amounts from Alternatives 2 and 5, although more similar to Alternative 2.

Effect Of Inflation On Transit Fee Revenues

The City ordinance implementing the transit impact development fee (Ordinance 229.81) limits the maximum fee to \$5 per sq. ft. The ordinance contains no provision for increasing the fee above this limit to account for inflation. This will cause the purchasing power of the fee to decline over time, so that the value of the fee (in 1982 dollars) will be less when it is levied in future years than its value today. The forecasts in Tables V.G.5 and V.G.6 show the value of the fee in 1990 and 2000 assuming inflation averages 8 percent annually over the 1984-2000 period.

If the fee could be adjusted to keep pace with inflation, the revenues from the fee would be higher than estimated in Tables V.G.5 and V.G.6. The total and annualized fee revenues would be 17 percent higher in 1990 if the fee increased at the rate of inflation. Revenues in 2000 (from office development over the entire 1984-2000 period) would range from 55 percent higher (with Alternative 4) to 81 percent higher (with Alternative 1) if the fee kept pace with inflation.

CHANGES IN CITY SERVICE COSTS

This subsection presents the forecasts of additional City expenditures in 1990 and 2000, by Alternative, that would result from changes in space and activity in the C-3 District that occur between 1984 and 2000. Forecasts have been prepared of the costs for additional services provided by three City service departments: the Police Department, the Fire Department, and the Municipal Railway (Muni).^{11/} Together, these three services accounted for 36 percent of the City's general government expenditures in 1981-82.^{12/}

The analysis of the effects of C-3 District growth on police and fire services and the methodologies used to forecast changes in the costs for these services are described in Section V.F and Appendix K. The methodology used to forecast changes in Muni expenditures due to C-3 District growth is shown in Appendix L (accompanied by tables providing supplementary information on Muni service impacts).

The estimates of additional expenditures for police, fire, and Muni services that would result from changes in space and activity in the C-3 District are shown in Tables V.G.7 and V.G.8. The tables follow the same format used in the analysis of revenues.

The forecasts show both operating and capital costs for Muni (see Appendix L for more detail on Muni costs). The operating costs account for fare revenues from Muni passengers. Additional fare revenues have been subtracted from additional operating expenditures to derive the net additional operating cost (or operating deficit). It is this net change in Muni operating costs that is shown in Table V.G.7 and V.G.8.

1984-1990

Changes in space and activity that occur in the C-3 District between 1984 and 1990 would result in additional annual City expenditures of about \$6 million in 1990 for police, fire, and Muni services (in 1982 dollars). Muni expenditures for operations and capital facilities would account for \$5.2 million, or 87 percent of the total additional service costs in 1990.

The annualized capital costs for additional Muni vehicles and vehicle storage and maintenance facilities would be about \$1.2 million in 1990. This annualized cost results from a total capital requirement of \$46.6 million for additional vehicles and facilities (refer to Appendix L, Tables L.39 and L.41, for more information on total Muni capital costs in 1990).

TABLE V.G.7: ADDITIONAL CITY EXPENDITURES IN 1990 AND 2000, NEEDED TO ACCOMMODATE ADDITIONAL SERVICE DEMAND OF C-3 DISTRICT, 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

City Service	Additional Expenditures In 1990 From Change In Service Demand 1984-1990	Additional Expenditures in 2000 From Change In Service Demand 1990-2000, By Alternative				
		1	2	3	4	5
Police	\$.64	\$.98	\$.98	\$.93	\$.64	\$.59
Fire	.12	.06	.06	--	--	--
Muni						
Operating (b)	4.03	7.12	6.92	6.83	6.40	6.68
Capital (c)	1.19	1.45	1.35	1.28	1.16	1.24
Total, Muni	5.22	8.57	8.27	8.11	7.56	7.92
TOTAL, ALL SERVICES	\$5.98	\$9.61	\$9.31	\$9.04	\$8.20	\$8.51

NOTE: Figures may not add to totals due to independent rounding.

(a) This table shows additional service expenditures in 1990 from changes in service demand in the C-3 District that occur between 1984 and 1990, and the additional expenditures in 2000, by Alternative, from changes in service demand that occur between 1990 and 2000. The figures for 2000 do not include the costs for changes in service demand during the 1984-1990 period. The total additional expenditures in 2000 from increased service demand during 1984-1990 and 1990-2000 are shown in Table V.G.8. For a description of the forecasting methodologies, refer to Section V.F (for police and fire services) and Appendix L (for Muni services).

(b) These are net additional operating costs. Additional fare revenues have been subtracted.

(c) Includes annualized capital expenditures for additional Muni vehicles and storage/maintenance facilities.

SOURCE: Recht Hausrath & Associates, based on information from Environmental Science Associates, Inc. and San Francisco Public Utilities Commission, Bureau of Finance.

TABLE V.G.8: ADDITIONAL CITY EXPENDITURES IN 2000, NEEDED TO ACCOMMODATE ADDITIONAL SERVICE DEMAND OF C-3 DISTRICT, 1984-2000 (Millions of 1982 Dollars) (a)

City Service	Additional Expenditures In 2000 From Change In Service Demand 1984-2000, By Alternative				
	1	2	3	4	5
Police	\$1.61	\$1.61	\$1.56	\$1.27	\$1.22
Fire	.18	.18	.12	.12	.12
Muni					
Operating (b)	11.15	10.96	10.87	10.44	10.71
Capital (c)	2.64	2.54	2.47	2.35	2.43
Total, Muni	13.79	13.50	13.33	12.78	13.14
TOTAL, ALL SERVICES	\$15.58	\$15.29	\$15.01	\$14.17	\$14.48

NOTE: Figures may not add to totals due to independent rounding.

(a) This table shows additional service expenditures in 2000, by Alternative, from changes in service demand in the C-3 District that occur between 1984 and 2000. Additional expenditures in 1990 from increased service demand that occurs during 1984-1990, and additional expenditures in 2000 from increased service demand that occurs during 1990-2000, are shown in Table V.G.7. For a description of the forecasting methodologies, refer to Section V.F (for police and fire services) and Appendix L (for Muni services).

(b) These are net additional operating costs. Additional fare revenues have been subtracted.

(c) Includes annualized capital expenditures for additional Muni vehicles and storage/maintenance facilities.

SOURCE: Recht Hausrath & Associates, based on information from Environmental Science Associates, Inc. and San Francisco Public Utilities Commission, Bureau of Finance.

The sum of the increased service costs in 1990 shown in Table V.G.7 would represent a very small addition to the existing expenditures of the three departments citywide. Additional costs of \$6 million in 1990 due to C-3 District growth would represent about 2 percent of the total expenditures of these departments in 1981-82./13/

1990-2000

There would be relatively little difference among Alternatives in the amount of additional service expenditures in 2000 due to changes in space and activity that occur between 1990 and 2000. The additional cost for police, fire, and Muni services in 2000 would range from \$8.2 million with Alternative 4 to \$9.6 million with Alternative 1 (in 1982 dollars). Alternative 5 would result in slightly more additional expenditures than Alternative 4. Alternative 2 would result in slightly less expenditures than Alternative 1. The additional expenditures with Alternative 3 would fall between the amounts for Alternatives 2 and 5.

The cost of additional Muni services would account for most of the total increased costs between 1990 and 2000. Muni expenditures would represent about 90 percent of the total additional expenditures in 2000 for all Alternatives.

The annualized capital cost for additional Muni vehicles and vehicle storage and maintenance facilities would range from about \$1.2 million (with Alternative 4) to about \$1.5 million (with Alternative 1) in 2000. These annualized costs result from total capital requirements of \$47.7 - \$59.6 million for additional vehicles and facilities.

1984-2000

The additional expenditures for police, fire, and Muni services in 2000 that result from changes in space and activity over the entire 1984-2000 period are shown in Table V.G.8. There would be relatively little difference among Alternatives; additional expenditures in the Alternative with the highest additional amount would be only about ten percent

higher than those in the Alternative with the lowest amount. The additional expenditures would range from \$14.2 million with Alternative 4 to \$15.6 million with Alternative 1. Alternative 5 would result in slightly more expenditures than Alternative 4. Alternative 2 would result in slightly less expenditures than Alternative 1. The additional expenditures with Alternative 3 would fall between the amounts for Alternatives 2 and 5.

The cost of additional Muni services would account for most of the total increased costs between 1984 and 2000. For all Alternatives, Muni expenditures would represent roughly 90 percent of the total additional expenditures for the three services in 2000.

The annualized capital cost for additional Muni vehicles and vehicle storage and maintenance facilities would range from about \$2.4 million (with Alternative 4) to \$2.6 million (with Alternative 1) in 2000. These annualized costs result from total capital requirements of \$94.3 - \$106.2 million for additional vehicles and facilities.

The sum of the increased service costs in 2000 shown in Table V.G.8 would represent a small addition to the existing expenditures of the three departments citywide. Additional costs of \$14.2 - \$15.6 million in 2000 due to C-3 District growth would represent roughly about 4 percent of the total expenditures of these departments in 1981-82./14/

Effect Of Muni Assumptions On Total Costs

The forecasts of additional service expenditures for Muni incorporate several assumptions that could have some bearing on the estimate of total costs resulting from C-3 District growth. First, it was assumed that the average fare paid by additional peak period C-3 District Muni passengers would rise at the rate of inflation over the 1984-2000 period, thus remaining constant in 1982 dollars./15/ If the average fare paid by these Muni riders does not keep pace with inflation, the additional net Muni operating costs shown in Tables V.G.7 and V.G.8 would be higher (since less revenues would be collected from additional C-3

District Muni riders, in 1982 dollars). If the average fare paid by the additional riders were not adjusted at all to account for inflation over this period (an extremely unlikely situation), the net Muni operating costs in 2000 would be roughly \$4 million higher (for all Alternatives) than estimated in Tables V.G.7 and V.G.8, if inflation averaged 8 percent per year. Thus, total costs also would be roughly \$4 million higher.

The other assumption affecting the cost forecasts relates to Muni capital expenditures. The estimate of costs for additional Muni vehicles and storage/maintenance facilities needed to accommodate increased ridership in the C-3 District includes the full cost of purchasing these capital items. It is possible federal and state grants would be available to subsidize a portion of the cost for transit capital improvements. For example, in recent years grants have paid for about 90 - 95 percent of the cost of new vehicles. If similar subsidies for transit vehicles were available in the future, the additional annual Muni capital costs in 2000 would be roughly \$1.3 - 1.4 million less than estimated in Tables V.G.7 and V.G.8. Thus, total costs also would be roughly \$1.3 - 1.4 million less. It is more likely that grants will fund a smaller portion of the cost of transit capital needs in the future than has been the case recently, however, but the outlook is uncertain./16/

FISCAL IMPLICATIONS

This subsection compares the revenues and costs estimated in previous subsections and discusses the fiscal implications for the City of C-3 District growth. The comparison consists of the City revenues and service costs most likely to be directly affected by changes in space and activity in the C-3 District. The revenues are from local taxes that accounted for about 40 percent of all general government revenues of the City in 1981-82. The costs are for services from three City departments that accounted for about 36 percent of all general government expenditures in 1981-82./17/

Comparison of Revenues and Costs

The additional City revenues and expenditures that would result due to growth in the C-3 District are compared in Tables V.G.9 and V.G.10. The format of the tables allows a simplified assessment of whether the additional revenues from the C-3 District would be sufficient to pay the costs required to provide additional services to the District. The format ignores certain aspects of the financing of Muni services that are discussed below.

Municipal Railway

The additional expenditures required to provide Muni services for C-3 District growth would exceed the additional special revenues received by Muni as a consequence of changes in the C-3 District. This would be the case for all Alternatives. In 1990, the annual Muni deficit (expenditures minus special revenues) would be about \$3.7 million (in 1982 dollars). In 2000, the annual deficit due to changes in the C-3 District over the entire 1984-2000 period would be relatively similar among the Alternatives. The annual deficit would range from about \$10 million with Alternative 4 to about \$10.3 million with Alternatives 1 and 5 (in 1982 dollars).

The comparisons of revenues and costs presented in Tables V.G.9 and V.G.10 show the fiscal consequences of funding this Muni deficit entirely with general fund revenues. Presently, federal and state operating grants and revenue transfers from the City's general fund are used to make up Muni's operating deficit. Contributions from the general fund financed about 50 percent of Muni's operating deficit in 1981-82./18/ This analysis ignores possible revenues from federal and state operating grants (except state TDA revenues) because the relationship between additional C-3 District growth and the receipt of additional grant revenue is uncertain./19/ Moreover, the future of some grant programs (particularly federal transit operating subsidies) is in doubt. Yet, it is possible revenues from federal and state grants could be available to finance some of the Muni deficit due to C-3 District growth.

TABLE V.G.9: COMPARISON OF ADDITIONAL CITY REVENUES AND EXPENDITURES IN 1990 AND 2000 DUE TO CHANGES IN SPACE AND ACTIVITY IN C-3 DISTRICT, 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

	Costs and Revenues In 1990 From Change In Space and Activity 1984-1990	Costs and Revenues In 2000 From Change In Space And Activity 1990-2000, By Alternative				
		1	2	3	4	5
Muni Expenditures (b)	\$ 5.22	\$8.57	\$8.27	\$8.11	\$7.56	\$7.92
Special Revenues for Muni TDA (c)	.74	1.23	1.19	1.14	.97	.98
Transit Impact Development Fee (d)	.82	.71	.66	.57	.31	.33
Muni Deficit (expenditures minus special revenues)	3.66	6.63	6.42	6.40	6.28	6.61
Police and Fire Expenditures	.76	1.04	1.04	.93	.64	.59
Total Expenditures (police and fire plus Muni deficit)	4.42	7.67	7.46	7.33	6.92	7.20
General Fund Revenues	40.19	57.48	56.56	50.59	41.30	39.27
Revenues Available for Other City Services (general fund minus total expenditures)	\$35.77	\$49.81	\$49.10	\$43.26	\$34.38	\$32.07

TABLE V.G.9: COMPARISON OF ADDITIONAL CITY REVENUES AND EXPENDITURES IN 1990 AND 2000 DUE TO CHANGES IN SPACE AND ACTIVITY IN C-3 DISTRICT, 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a) (Continued)

- (a) This table shows additional costs and revenues in 1990 from changes in space and activity in the C-3 District that occur between 1984 and 1990, and the additional costs and revenues in 2000, by Alternative, from changes in space and activity that occur between 1990 and 2000. The figures for 2000 do not include the costs and revenues from changes during the 1984-1990 period. The additional costs and revenues in 2000 from changes during 1984-1990 and 1990-2000 are shown in Table V.G.10.
- (b) Includes operating and capital costs. Operating costs are net costs (additional operating costs minus additional fare revenues).
- (c) Sales tax revenues from additional taxable sales in C-3 District, as authorized by State Transportation Development Act (TDA).
- (d) Assumes current maximum fee would not be increased during analysis period, thus losing value in 1982 dollars over time.

SOURCE: Recht Hausrath & Associates.

TABLE V.G.10: COMPARISON OF ADDITIONAL CITY REVENUE AND EXPENDITURES IN 2000 DUE TO CHANGES IN SPACE AND ACTIVITY IN C-3 DISTRICT, 1984-2000 (Millions of 1982 Dollars) (a)

	Costs and Revenues In 2000 From Change In Space and Activity 1984-2000, By Alternative				
	1	2	3	4	5
Muni Expenditures (b)	\$13.79	\$13.50	\$13.33	\$12.78	\$13.14
Special Revenues for Muni TDA (c)	1.96	1.93	1.88	1.70	1.72
Transit Impact Development Fee (d)	1.53	1.47	1.39	1.12	1.14
Muni Deficit (expenditures minus special revenues)	10.30	10.10	10.06	9.96	10.28
Police and Fire Expenditures	1.79	1.79	1.68	1.39	1.34
Total Expenditures (police and fire plus Muni deficit)	12.09	11.89	11.74	11.35	11.62
General Fund Revenues (e)	89.04	88.12	82.15	72.86	70.83
Revenues Available for Other City Services (general fund minus total expenditures)	\$76.95	\$76.23	\$70.41	\$61.51	\$59.21

TABLE V.G.10: COMPARISON OF ADDITIONAL CITY REVENUE AND EXPENDITURES IN 2000 DUE TO CHANGES IN SPACE AND ACTIVITY IN C-3 DISTRICT, 1984-2000 (Millions of 1982 Dollars) (a)
(Continued)

- (a) This table shows additional costs and revenues in 2000, by Alternative, from changes in space and activity in the C-3 District that occur between 1984 and 2000. Additional costs and revenues in 1990 from changes that occur during 1984-1990, and additional costs and revenues in 2000 from changes that occur during 1990-2000, are shown in Table V.G.9.
- (b) Includes operating and capital costs. Operating costs are net costs (additional operating costs minus additional fare revenues).
- (c) Sales tax revenues from additional taxable sales in C-3 District, as authorized by State Transportation Development Act (TDA).
- (d) Assumes current maximum fee would not be increased during analysis period, thus losing value in 1982 dollars over time.
- (e) The revenues in 2000 are less than the sum of the 1990 and 2000 revenues from Table V.G.9. This is because property taxes from space added between 1984-1990 would decline in real value over the 1990-2000 period. Refer to Appendix L for more information.

SOURCE: Recht Hausrath & Associates.

Capital costs for transit vehicles and vehicle storage and maintenance facilities account for a portion of the additional Muni expenditures shown in Table V.G.9 and V.G.10. Typically, capital costs for Muni are not financed from the City's general fund./20/ The transit impact development fee was established as a method to provide funds for capital and operating expenditures for additional Muni services to the downtown area./21/ If used only for capital purchases, the additional revenues from the transit impact development fee would fund only about 50 - 60 percent (depending on the Alternative) of the Muni capital costs needed to accommodate growth in the C-3 District./22/ Revenues from the fee may be sufficient for the purchase of transit capital improvements if the City is responsible for only a portion of the full cost of these items (if, for example, federal and state transit grants continue to subsidize most of the cost for vehicles and other transit facilities)./23/ If federal and state grants are not available in the future, however, the funding of the capital costs of additional C-3 District Muni service would require revenues in addition to those from the transit impact development fee. Then, revenues would be needed from the general fund or from bonds that would become an obligation of the general fund./24/

General Fund

The additional general fund revenues from C-3 District growth would exceed the costs for providing additional police and fire services to the District and the costs of the Muni deficit. This would be the case for all Alternatives. In 1990, the additional revenues from the six local taxes would exceed the sum of the additional costs for police, fire, and the Muni deficit by about \$35.8 million (in 1982 dollars). In 2000, the additional revenues due to changes in the C-3 District during the 1984 to 2000 period would exceed the additional costs by about \$59.2 million for Alternative 5 to about \$77 million for Alternative 1.

The magnitude of the difference between revenues and costs would vary among the Alternatives largely due to differences in revenues. In 2000, there would be a difference of about \$18.2 million in general fund

revenues between the Alternative with the least additional revenue (Alternative 5) and the Alternative with the most additional revenue (Alternative 1). Additional service costs in 2000 to accommodate growth in the C-3 District would be relatively similar for the Alternatives, however. The sum of the costs in 2000 for additional police and fire service and the Muni deficit would vary by about \$700,000 among the Alternatives (from about \$11.4 million with Alternative 4 to about \$12.1 million with Alternative 1).

The difference between additional revenues and costs in 2000 would vary by about \$2.3 million for Alternatives 4 and 5. Alternative 4 would have less costs and more revenues than Alternative 5. The lower costs would result from lower Muni expenditures. Alternative 4 would have lower additional Muni expenditures than Alternative 5 because of fewer additional peak-period Muni riders (resulting primarily from a lower amount of employment growth). The higher revenues with Alternative 4 would be due largely to differences in property tax revenues that reflect the greater amount of housing added to the C-3 District with Alternative 4 than with Alternative 5.

The difference between additional revenues and costs would be relatively similar for Alternatives 1 and 2. The Alternatives would vary by about \$700,000 in 2000. Alternative 1 would have about \$200,000 more costs and about \$900,000 more revenues than Alternative 2.

With Alternative 3, additional revenues would exceed additional costs by about \$70.4 million in 2000. This would place it between Alternatives 2 and 4, although more similar to Alternative 2.

Despite differences in the absolute dollar amount that revenues exceed costs, the Alternatives show close similarities in the relationship between their respective revenue "surpluses" and the amount of space added to the C-3 District. In other words, when the excess of revenues over costs is divided by the amount of space added to the District between 1984 and 2000, there is relatively little difference among the Alternatives. This implies that the fiscal benefits of growth allowed under each Alternative would be roughly equivalent on a per sq. ft. basis.

Although Tables V.G.9 and V.G.10 show that additional general fund revenues would exceed the additional costs for police and fire services and the Muni deficit, the comparison does not include all possible effects on revenues and costs. As described earlier, the comparison of these revenues and costs allows conclusions to be made only about revenues from certain local taxes and the costs for the three City services considered to be affected most directly by changes in space and activity in the C-3 District. The amounts representing the difference between the revenues and costs would be available for other City expenditures, including the service effects not quantified here. These topics are discussed below.

Hotel Tax Fund

In addition to the revenues shown in Table V.G.9 and V.G.10, growth in the C-3 District would result in additional revenues for the hotel tax fund. In 1990, the additional revenues for the hotel tax fund would be about \$4.3 million. In 2000, the additional revenues would range from about \$11.8 million with Alternatives 4 and 5 to \$12.6 million with Alternatives 1, 2, and 3. (Tables V.G.3 and V.G.4 show the forecasts of hotel tax fund revenues.)

Effects of Other Factors on Revenue/Cost Balance

The actual effect of additional C-3 District growth on City finances could be different from the revenue/cost balance shown in Tables V.G.9 and V.G.10 for a variety of reasons. Changes in the assumptions used to forecast revenues and costs could result in higher or lower estimates. Similarly, the inclusion of revenues and costs not quantified here might affect the magnitude of the revenue/cost differential. Examples of factors that could influence the estimates of revenues and costs are shown in Table V.G.11.

Some of the factors summarized in Table V.G.11 reflect the assumptions made in the process of forecasting revenues and costs. The assumptions of this analysis were based on reasonable expectations for the future.

TABLE V.G.11: FACTORS THAT COULD AFFECT CONCLUSIONS OF FISCAL IMPACT ANALYSIS

COSTS COULD BE HIGHER:

- If included proposed Muni improvement programs planned for areas outside C-3 District or improvements whose implementation could occur independent of additional growth in District.
 - extension of Muni Metro service to Southern Pacific depot
 - provision of Muni Metro service in Bayshore corridor
 - extension of J-line to Balboa Park
 - provision of E-line service along Embarcadero
- If increased traffic congestion results in higher Muni operating expenditures.
- If the combined effect of C-3 District growth south of Market St. and growth south of C-3 District would require additional fire services not warranted with C-3 District growth alone.
- If Muni fares do not keep pace with inflation.
- If considered property taxes foregone because City purchases land for Muni vehicle storage and maintenance facilities.
- If included costs for City services not quantified in this analysis.
 - direct costs for other services to C-3 District.
 - indirect costs due to indirect effects of District on City services outside District.
- If, for equity reasons, C-3 District should support a portion of the cost of all City services, whether or not services are affected by growth in District.
- If service standards governing the type and quality of City services are higher in the future than the standards today.

COSTS COULD BE LOWER:

- If Muni capital costs are subsidized by federal and state grants.
- If exclusive transit lanes or other improvements to transit vehicle movement reduce Muni operating expenditures.
- If service standards governing the type and quality of City services are lower in the future than the standards today.

REVENUES COULD BE HIGHER:

- If included federal and state transit operating grants in addition to TDA.
- If the property accounting for new space in C-3 District changes ownership after it is added to District (i.e., if property turnover occurs after space is added).
- If values of existing property increased under some Alternatives because less new space was developed relative to demand.
- For the property tax and transit impact development fee if inflation averages less than 8 percent per year.
- If the transit impact development fee could be increased above its current limit to keep pace with inflation.
- If included City revenues not quantified in this analysis.
 - direct revenues from other City revenue sources affected by changes in space and activity in C-3 District.
 - indirect revenues due to indirect effects of District on City revenues generated outside District.
- If split-roll property taxation is adopted, removing limitation on the growth of assessed value of commercial property that does not change ownership.
- If tax rates are increased.

REVENUES COULD BE LOWER:

- If Muni's share of TDA revenue is reduced (because the share for other transit operators is increased).
- For the property tax and transit impact development fee if inflation averages more than 8 percent per year.
- If the transit impact development fee is levied at less than the current maximum rate.
- If the transit impact development fee is invalidated by the court.
- If tax rates are reduced.

Yet, changes could occur that might alter the assumptions and thereby modify their influence on revenues and costs. Examples include the assumptions concerning tax rates, inflation, fare increases for Muni, and service standards affecting the quality and type of service provided by the City.

Other factors identified in Table V.G.11 relate to items not specifically considered in the analysis. For example, the costs of additional Muni service do not reflect any effects associated with increased traffic volumes in the C-3 District. It is possible that increased traffic congestion could add to the cost of Muni service if more vehicles would be needed to maintain standards of service during peak periods./25/ Yet, if exclusive transit lanes were provided on certain streets, Muni service might not be adversely affected. The implications of increased C-3 District traffic volumes on Muni service were not evaluated as part of this report. As a consequence, the potential impact on the additional costs for Muni service was not addressed in the forecasts.

There are several transit system improvements proposed by Muni that were not included in the analysis of additional Muni services affected by growth in the C-3 District. These include the extension of LRV service to the Southern Pacific depot, the provision of Metro service in the Bayshore corridor, the extension of the J-Line to Balboa Park, and the provision of E-Line service along the Embarcadero. It was assumed that the implementation of some of these improvements would occur whether or not additional growth took place in the C-3 District because current transit demand was sufficient to warrant them. Thus, the need for these improvements would not be a consequence of additional C-3 District growth. The LRV extension to the Southern Pacific depot, the J-Line extension to Balboa Park, and the E-Line would be among this group. For other improvements, it was assumed that factors besides C-3 District growth would be principally responsible for creating the demand for the facilities. For Metro service in the Bayshore corridor, anticipated development south of the C-3 District (such as the proposed Mission Bay project) was assumed to be the major factor affecting implementation.

If, instead, it was determined that a portion of the need for these Muni improvement programs would be due to growth occurring in the C-3 District between 1984 and 2000, then the Muni costs estimated here would be understated.

Another factor that could affect the forecasts of additional costs is the question of fire services in the southern portion of the C-3 District. As discussed in Section V.F (Community Services), the amounts of growth forecast under all Alternatives could be accommodated with the fire department's current fire suppression services. An additional engine company (or companies) would not be warranted. This conclusion did not consider the effects of growth outside the C-3 District. Many of the fire units that serve the District also serve portions of San Francisco south of Folsom Street. Future development south of the C-3 District, in combination with the growth forecast in the District, might require additional fire services (such as an engine company) as existing units serving the District become more busy./26/ This possibility is not accounted for in the forecasts of additional costs.

Other costs not included in the forecasts are the direct effects on City services in the C-3 District other than police, fire, and Muni service and the indirect effects of C-3 District growth on services provided elsewhere in the City.

Other services which could be directly affected by C-3 District growth include recreation and parks, street maintenance, general government, and self-supporting enterprise functions. Recreation and park services in the C-3 District could be affected by growth to the extent that increased usage of existing facilities increases maintenance costs. The other cost consideration would be whether new park facilities are added and the magnitude of development and maintenance costs. The former factor could potentially have more effect on public costs than the latter since new facilities provided on-site as a part of new office or housing projects are likely to be privately maintained./27/

V. Environmental Impacts

The cost of street maintenance services in the C-3 District could be affected by future traffic volumes and future levels of pedestrian activity. Greater traffic and pedestrian activity could increase the costs of street repair and street cleaning services. However, street maintenance services could be somewhat less in future years to the extent that office development south of Market Street replaces industrial and warehouse activities and thus reduces truck traffic there. Further, the planned renovation of C-3 District streets (which would occur whether or not growth takes place in the C-3 District) would reduce repair costs at least during the 1984-2000 period./28/

The cost of general government services could be affected by the nature of the C-3 District controls adopted as well as by the overall growth of downtown activity. Among the Alternatives, those with more ongoing review processes could be more costly to implement.

The City's enterprise services levy fees and service charges that pay for the full cost of services. There would be no net fiscal effect on these services due to C-3 District growth, since any change in service demand and service expenditures would be matched by the revenues collected from fees. Self-supporting enterprise functions include water supply and distribution (the Water Department/Hetch Hetchy project), sewage collection and treatment (the Clean Water Program), and solid waste collection and disposal (privately operated under contract with the City). Enterprise functions which require operating subsidies from the City's general fund because they do not receive revenue sufficient to pay the full cost of services include the Municipal Railway and San Francisco General Hospital.

The indirect effects of C-3 District growth on services provided elsewhere in the City could include effects on social services, public health, cultural services, and recreation and park services. As discussed earlier, it is difficult to trace the effects of the District on services provided in other areas of the City and to specify which effects would be due to additional downtown growth and which would be the result of other factors. These impacts have not been quantified in

this report. Yet, to the extent that they exist, the costs associated with C-3 District growth could be higher than estimated here.

Generally, the indirect effects of downtown growth can be viewed from two perspectives. One is whether growth affects activity elsewhere in the City. For example, the growth of C-3 District activity could have an indirect effect on recreation and park services to the extent that the use of parks elsewhere in the City (such as Golden Gate Park) increases because additional non-resident workers would be more likely to use San Francisco parks if they worked in the C-3 District than if they worked elsewhere in the region.

A second perspective is that of whether C-3 District growth affects the number of City residents and/or the socio-economic characteristics of the City's population and the extent that these differences affect the use of City services. For example, indirect effects on social services and public health services could result if downtown growth would increase the number of persons receiving public assistance after unsuccessful efforts to find work in San Francisco (if, for example, more unemployed persons seeking work would move to San Francisco with higher levels of C-3 District growth). Similarly, the number of persons receiving social services and public health services could decline if a greater share of the City's population is employed because of C-3 District job growth.

The estimates of the costs of additional downtown growth shown in this report do not reflect equity considerations. It was assumed that City service costs unaffected by growth in the C-3 District should not be included as a component of the impact of District growth on City expenditures. If, however, it is decided that on equity grounds the C-3 District should share these costs with the rest of the City, then a portion of all additional City service costs should be assigned to the District. This report did not account for such costs.

In addition to factors that could result in higher costs than estimated in Tables V.G.9 and V.G.10, there could be factors that result in lower costs or higher revenues. As mentioned above, federal and state grants could fund a large portion of the capital costs for Muni vehicles and facilities. This would reduce the City's cost responsibility for providing the additional vehicles and facilities needed to accommodate growth in C-3 District Muni ridership. Similarly, federal and state grants might be available to subsidize a portion of the additional operating expenditures that would result from additional C-3 District Muni service. These operating subsidies would reduce the need to use general fund revenues to finance the Muni operating deficit that would result from C-3 District growth.

Revenues could also be higher than estimated here if the property that would account for the new space constructed in the C-3 District changes ownership after it is added to the District. The estimates of property tax revenues assumed that new space would not be sold during the period of this analysis. Since the growth of a property's assessed value is limited to 2 percent per year unless the property changes ownership, the real assessed value (in 1982 dollars) would decline over time if inflation is higher than 2 percent per year.^{/29/} Once resold, however, the assessed value would reflect the real value of the property (at least until the next year's limitation on changes in assessed value again affects the property's value in real terms). Therefore, by assuming no property turnover would occur for new space before 2000, the property tax estimates (which are based on the amount of additional assessed value in the C-3 District) could be understated to the extent turnover actually occurs.

Other revenues not considered in the forecasts include the additional revenues that would result from indirect effects of C-3 District growth. Examples include taxes from the spending of District workers, residents, and visitors in other areas of the City, and taxes paid by San Francisco businesses located outside the downtown that benefit from additional economic activity in the District. Like indirect costs, these indirect effects on revenues are difficult to quantify. To the extent

that they exist, however, the revenues from C-3 District growth could be higher than estimated here.

These and other factors summarized in Table V.G.11 indicate that costs and revenues in addition to those included in the forecasts could have some bearing on the actual revenue/cost balance of additional C-3 District growth. Whether these other factors would result in more or less City revenues than costs is unknown. If these other factors add to the costs more than to the revenues, then the estimated excess of revenues over costs forecast for each Alternative would be less than shown in Tables V.G.9 and V.G.10.

The hotel tax fund could be considered a source of additional revenue to offset any effects of C-3 District growth on the cultural and recreation services that benefit from the fund. For example, growth in the District might have direct or indirect effects on the use of the War Memorial buildings (such as the Opera House and the San Francisco Museum of Modern Art) or Moscone Center. If these effects result in added costs for the City, the additional hotel tax fund revenues from C-3 District growth would be available to pay for the additional costs. Whether additional revenues would be more or less than additional costs is unknown. The additional annual revenues would amount to \$11.8 million (for Alternatives 4 and 5) or \$12.6 million (for Alternatives 1, 2, and 3) in 2000. A portion of the revenues from the hotel tax fund would also be available to finance neighborhood arts programs and to provide low income housing in Yerba Buena Center.

Summary

The forecasts of the revenues from local taxes and the costs for police, fire, and Muni services indicate that changes in space and activity in the C-3 District would result in more additional revenues than additional costs. This would be the case for all Alternatives. The difference between annual revenues and annual costs in 2000 would be the greatest with Alternative 1 and the least with Alternative 5. In 2000, annual revenues would exceed annual costs by about \$77 million with

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Alternative 1 and by about \$59.2 million with Alternative 5 (in 1982 dollars). The difference between additional revenues and costs would be relatively similar for Alternatives 1 and 2, and for Alternatives 4 and 5. Alternative 3 would be between Alternatives 2 and 4, although more similar to Alternative 2.

The difference between revenues and costs due to C-3 District growth would be available to finance other City services. This would include those direct and indirect costs not considered in the forecasts shown in Tables V.G.9 and V.G.10, as well as the expenditures for services unaffected by growth in the District. Whether the revenues would be adequate to cover other costs is not known and depends largely on the cost definitions chosen. In the event the revenues are sufficient to pay for other direct and indirect service effects of C-3 District growth as well as for services unaffected by District growth, the City would be better able to maintain the quality of its public services. The revenues from the C-3 District would reduce the effect of potential future cutbacks in state and federal assistance, and lessen the need for increases in local taxes and fees to finance City government.

NOTES - Fiscal Factors

- /1/ There are two points which should be kept in mind when reading this section. One is that the changes in costs and revenues due to growth 1984-2000 do not imply that if there was little or no economic growth there would be no change in costs and revenues. This is not the case. Other Alternatives would have to be evaluated to identify how costs and revenues would change under lower growth or no growth assumptions.

The second point is that the costs and revenues discussed here are only from land uses and economic activity in the C-3 District. They are not estimates for the entire City. If the lower C-3 District growth of one Alternative as compared to another meant that there was a shift in activity to other parts of the City, the Citywide fiscal impacts would not be the same as those for the C-3 District. Analysis would have to be done for these other areas before Citywide impacts could be described.

- /2/ Based on information provided by Jerry Smyth, Head Accountant, Controllers' Office, City and County of San Francisco, telephone conversation with Recht Hausrath & Associates, March 11, 1983; and Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 30,

NOTES - Fiscal Factors

1982. General government revenues include the revenues of the City's general, special revenue, and debt service funds, as well as the operating revenues of the Municipal Railway and San Francisco General Hospital. Refer to Table IV.G.1 and Figure IV.G.1 for information on City revenues in 1981-82.

/3/ Ibid.

/4/ Property taxes from space added between 1984 and 1990 would decline in real value after 1990 due to the limitations imposed by Proposition 13 on the growth of the assessed value of property whose ownership does not change. In years following the year in which new space would be added, the assessed value of the new space was assumed to decline by 5.6 percent per year, in 1982 dollars. This is the net effect of a 2 percent limit on the annual growth in assessed value of unsold property (due to Proposition 13) and the assumption of an 8 percent annual rate of inflation. If the average annual rate of inflation is higher than 8 percent between 1984 and 2000, the annual decline in real assessed value would be greater. If the average rate of inflation is lower than 8 percent per year, the decline in real assessed value would be less. See Appendix L (Table L.5) for additional information on the methodology for forecasting property tax revenues.

/5/ Based on information provided by Jerry Smyth, Head Accountant, Controllers' Office, City and County of San Francisco, telephone conversation with Recht Hausrath & Associates, March 11, 1983; and Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 30, 1982.

/6/ A portion of the 6.5 cent sales tax is allocated to county transit operations, as authorized by the state Transportation Development Act (TDA). The rate is .25 cents per dollar of taxable transactions. The TDA revenues generated in each Bay Area county are allocated among individual transit and transportation purposes by the Metropolitan Transportation Commission (MTC).

/7/ New office space is considered "any new construction, addition, extension, conversion, or enlargement of an existing structure which includes any gross square feet of office use." (Ordinance 224-81, p. 2). The amount of new office space to which the fee is applied is the total office space added (by new construction as well as conversions) minus the office space removed to construct the new space.

/8/ The revenues from the fee can be used for "the expansion of service capacity through the purchase of rolling stock, the installation of new lines, the addition to existing lines and the long term operation, maintenance, repair and replacement of those expanded facilities." (Ordinance 224-81, p. 5).

NOTES - Fiscal Factors

- /9/ The fee is limited to a maximum of \$5 per sq. ft. Since the fee cannot be adjusted above \$5 per sq. ft. to account for inflation, the real value of the fee would decline over time. This analysis assumed the value of the fee would decline in real terms, assuming an average annual inflation rate of 8 percent over the study period.
- /10/ The earned interest yield of pooled funds invested by the City tends to correlate with the moving average of the interest rate on 90-day U.S. Treasury Bills (Mary I. Callanan, Treasurer, City and County of San Francisco, letter to Recht Hausrath & Associates, September 24, 1982). Over the 15-year period between 1968 and 1982, the average interest rate on 90-day T-Bills was nearly the same as the average rate of annual inflation in the San Francisco-Oakland area (the average annual rate for T-Bills was 7.43 percent, and the average annual rate of inflation was 7.67 percent). It was assumed that a similar relationship between the yield on invested funds and the rate of inflation would exist over the 1984-2000 period.
- /11/ These three services would represent the services most directly affected by additional growth in the C-3 District. They were the ones identified for quantification within the scope of this study.
- /12/ Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 30, 1982. General government expenditures include the expenditures of the City's general, special revenue, and debt service funds, as well as the operating expenditures of the Municipal Railway and San Francisco General Hospital.
- /13/ Office of the Controller, City and County of San Francisco, Comprehensive Annual Finance Report, Year Ending June 30, 1982.
- /14/ Ibid.
- /15/ The average fare paid by additional peak period C-3 District Muni passengers was assumed to be the average adult fare (consisting of full-fare adult cash fares and adult Fast Passes). Assuming the average adult fare would keep pace with inflation is a reasonable assumption for the long-term perspective of this analysis. It is supported by the pattern of recent fare increases, and recognizes that to remain eligible for state transit operating grants (as authorized by A.B.1107) Muni's farebox revenues must be equal to at least 33 percent of its operating expenditures. Thus, if average operating expenditures increase with inflation, average farebox revenues must rise at the same pace over time to maintain the required 33 percent relationship.
- /16/ It is anticipated that the City's share of the total cost of transit vehicles planned for purchase between 1982 and 1992 would be about 20 percent. About 80 percent of the cost is expected to be

NOTES - Fiscal Factors

financed by state and federal grants. (These vehicles would be needed to replace older vehicles presently in service and to accommodate current transit demand. They would not be part of the vehicles needed to accommodate future C-3 District growth.) It is uncertain whether the City's share of the cost of purchasing vehicles required to serve additional C-3 District growth over this same period would be similar. The amount of the local match and the availability of state and federal grants after 1992 is even more uncertain. (Louise Stoll, Director, Capital and Resources Development, San Francisco Public Utilities Commission, telephone conversation with Recht Hausrath & Associates, April 28, 1983.)

- /17/ Office of the Controller, City and County of San Francisco, Comprehensive Annual Financial Report, Year Ending June 20, 1982.
- /18/ Ibid. The remainder of Muni's operating deficit was funded by state and federal operating subsidies (including TDA revenues) and earned interest.
- /19/ Additional retail sales in the C-3 District that accompany District growth would have a direct effect on creating additional TDA revenues for Muni, since TDA revenues derive from a .25 percent sales tax on taxable retail sales in the City. Other state operating subsidies also could be affected by sales activity in the C-3 District (A.B. 1107 revenues for Muni come from the .5 percent sales tax for BART), but their disbursement to Muni is likely to be based less on local sales tax contributions than on the respective needs of several transit operators in the region (such as BART and AC Transit in addition to Muni.). (Sarah MacKusick, Grants Allocation, Metropolitan Transportation Commission, telephone conversation with Recht Hausrath & Associates, March 29, 1983).
- /20/ The passage of Proposition B on the City ballot in the November 1982 election removed the charter limitation on the expenditure of general fund revenues for Muni capital costs. Since that time, the Mayor and Board of Supervisors have approved the purchase of new Muni vehicles with revenues from the current general fund surplus. About \$21 million from the general fund has been designated for the purchase of new buses.
- /21/ The intent of the transit impact development fee is to finance additional Muni expenditures attributable to office development. The fee does not apply to retail and hotel development. Increased retail and hotel activity forecast for this period would contribute to overall demand for Muni service on the downtown area, however, and thus to the Muni costs discussed here.
- /22/ The transit impact development fee could be used to finance both capital and operating needs. There is no assurance that the transit impact fees from additional C-3 District office development

NOTES - Fiscal Factors

would be devoted entirely to the purchase of capital facilities. Moreover, there is no assurance that the additional revenue from the transit fee would be spent at the same pace costs accrue, although that is the intent.

- /23/ Federal and state grants for transit capital facilities are expected to finance about 80 percent of the cost of transit vehicles planned for purchase by the City between 1982 and 1992 (these vehicles would be needed for current transit service, not for additional C-3 District growth). Refer to note 16 for more information.
- /24/ The San Francisco Municipal Railway Improvement Corporation (SFMRIC) is a non-profit corporation established in 1971 for the purpose of selling bonds for transit improvements. The bonds could be retired by Muni revenues or general City revenues.
- /25/ Because buses move slower as traffic congestion increases, it takes longer for buses to complete their routes and return to C-3 District service. Thus, to maintain standards of service during peak periods, additional buses would be necessary to compensate for the fewer existing buses that could make multiple runs.
- /26/ Refer to Section V.F (Community Services) for more information on the fire service impacts due to C-3 District growth.
- /27/ It is likely that the open space and recreation areas provided as a part of new development would be included on-site and privately maintained. Alternative 5 has a requirement for the provision of recreation and open space in new projects. It is likely that most of this space would be provided on-site although it is possible that off-site park facilities could be developed. It is unclear whether such off-site facilities would be publicly maintained. It is possible that future development of Yerba Buena Center would include recreation facilities and open space areas in the C-3 District which would be publicly maintained. If so, costs associated with these facilities would occur under all Alternatives.
- /28/ Based on consideration of the factors cited in the text and review of the forecasts of changes in space, employment, and traffic volumes prepared for this study, it was concluded that, on balance, street maintenance services in the C-3 District are unlikely to be noticeably affected by additional growth in the District. (Richard Evans, Assistant Director of Public Works, City and County of San Francisco, conversations with Recht Hausrath & Associates, December 21, 1982 and April 19, 1983.)
- /29/ This analysis assumed that inflation would average 8 percent annually over the 1984-2000 period. Under these conditions, the assessed value of space added to the C-3 District would decline by 5.6 percent per year (in 1982 dollars) until the property changes ownership. This is the net effect of the 2 percent limitation on annual growth in assessed value (due to Proposition 13) and an 8 percent inflation rate.

H. URBAN DESIGN

1. ARCHITECTURAL RESOURCES

1990

Projects proposed to be completed in or before 1990 would result in conversions/1/ of approximately 37 buildings in the C-3 District (see Table V.H.1). These buildings constitute three percent of the total 1,286 rated buildings in the District. Conversion of this number of resources would represent a rate of about six per year, less than the rate of seven to nine per year that occurred between 1979 and 1984. Five of the 37 buildings are City Landmarks or National Register Properties; 19 are located in the Downtown Office District (Subarea One). Three rated buildings (351 California Street, 311 California Street, and 466 Bush Street) are under the same ownership as proposed adjacent developments and would be incorporated into the design of the new projects.

Two projects that are planned to be built by 1990 include additional building floor area transferred from neighboring architectural resources. The transfer of development rights (TDRs) or unused floor area, from architectural resources to other sites may provide a developer of a new project an additional building allowance./2/ The Mechanics Institute Library (85 Post Street) and the Hallidie Building (130 Sutter Street) are current examples of projects that would provide unused development rights to adjacent projects.

2000

Generally, the sites within the C-3 District that would be most susceptible to development after 1990 under a given Alternative are those for which the difference between the existing level of development and the potential level of development under that Alternative would be greatest. The methodology for forecasting the relative susceptibilities to development of all building sites in the C-3 District under each Alternative is presented in Appendix G. In order to provide a basis for determining the relative effectiveness of the various provisions of each Alternative for protecting architectural resources, the basic forecasting technique made no initial distinctions between sites occupied by architectural resources and those not occupied by such resources. The purpose of this section is, first, to project for each Alternative the

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numbers of resources which presently occupy sites that would become susceptible to development in the absence of any protective measures and, second, to assess the relative effectiveness of the measures embodied in each Alternative for providing such protection.

The estimates of architectural resources vulnerable to conversion as a consequence of new development was prepared using a methodology similar to that described for the estimates of uses demolished in the course of new development. For the 1981 to 1984 and 1984 to 1990 periods, the estimates of vulnerable architectural resources reflect the conditions of the sites under construction or proposed to be developed by the pipeline projects. For the 1990 to 2000 period, the ranking of probable development sites generated for each alternative by the real estate feasibility model provided a guide to estimating the magnitude and locational distribution of architectural resources that would be susceptible to redevelopment, as a consequence of new development.

The real estate feasibility model was not designed to be an accurate predictor of C-3 District development on a parcel-by-parcel basis. Therefore, to estimate the number of architectural resources threatened in each subarea, a range of sites ranked highest in terms of development feasibility was indentified that provided an amount of space about twice as large as the forecast amount of new development. It was assumed that the most likely development sites for the 1990 to 2000 period would come from within this range of potential sites.

For each subarea, the estimate of architectural resources vulnerable due to new development was subsequently forecast to be about half of that indicated in the total range of potential new development sites. The architectural resources could also be identified by designation (National Register, City Landmark Heritage A, B or C).

The resulting estimates of vulnerable resources are presented primarily to indicate the differences among the Alternatives in the magnitude of the resources threatened. They cannot be interpreted as predicting which individual buildings would be demolished.

The five Alternatives include various methods for transferring the unused allowable floor area ratio (FAR) of one site (i.e. the site of an eligible architectural resource) to another site (i.e. that of a proposed development). The five Alternatives would restrict the use of TDRs to City Landmarks, National Register Properties, and/or Heritage rated "A" and "B"

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buildings. Under no Alternative would "C"-rated buildings be eligible to transfer their unused development rights to other sites. The potential use of TDRs as defined by each Alternative depends on real estate and economic factors, and is described in detail in Section V.B. and Appendix G. The information shown in Table V.H.1 indicates the potential effect of each Alternative with and without its particular protective measures. See Table III.2, Part III, for a summary of these measures. The susceptibilities of C-3 District architectural resources to conversion are shown in Tables V.H.1.1 and V.H.1.2, and are discussed below.

Alternative 1

Without Protective Measures. Under Alternative 1 about 116 architectural resources in the C-3 District would become susceptible to conversion between 1990 and 2000. Of these 116 buildings, seven are National Register Properties and/or City Landmarks. The rate of conversion between 1990 and 2000 would be about 12 buildings per year, the highest conversion rate among the Alternatives, and higher than the rate of about six per year predicted between 1984 and 1990. Most of these conversions would take place in the Downtown Office District.

With Protective Measures. Alternative 1 would continue the current City policy that allows TDRs from City Landmarks to adjacent development sites. If this policy were continued, the projected number of architectural resources (National Register Properties/City Landmarks and "A"- and "B"-rated buildings) vulnerable to conversion would decrease by about seven percent, from 43 to 40.

Alternative 2

Without Protective Measures. The development forecast of resources susceptible to conversion under Alternative 2 is similar to that of Alternative 1. About nine "A"-rated buildings would be susceptible to conversion, a decrease of one from Alternative 1. In addition, Alternative 2 forecasts a lower total number of vulnerable resources, 107 as compared to 116 for Alternative 1.

With Protective Measures. Alternative 2 would allow TDRs from "designated historic or architecturally significant buildings" and Heritage "A" and "B" buildings within the

TABLE V.H.1.1: C-3 DISTRICT ARCHITECTURAL RESOURCES SUSCEPTIBLE TO CONVERSION BY 1990 AND 2000

Study Area and Type of Resource (a)	Total Resources in 1984	Total Proposed to be Converted by 1990	Total Forecast to Become Vulnerable 1990-2000 _r				
			1	2	by Alternative		
			3	4	5		
<u>Subarea 1 (without preservation measures)</u>							
Heritage A	47	5		4	4	3	
Heritage B	83	14	20	19	18	16	
Subtotal A + B (b)	130	19	25	23	22	19	
Heritage C	111	8	39	37	38	34	
Total A + B + C	241	27	64	60	60	53	
National Register and/or City Landmarks (b)	17	4	5	3	3	2	
<u>Subareas 2-7 (without preservation measures)</u>							
Heritage A	82	2	5	5	4	4	
Heritage B	210	2	13	11	11	6	
Subtotal A + B (b)	292	4	18	16	15	10	
Heritage C	749	6	34	31	40	11	
Total A + B + C	1041	10	52	47	55	21	
National Register and/or City Landmarks (b)	14	1	2	2	2	2	
<u>C-3 Totals (without preservation measures)</u>							
Heritage A	129	7	10	9	8	7	
Heritage B	293	16	33	30	29	22	
Subtotal A + B (b)	422	23	43	39	37	29	
Heritage C	860	14	73	68	78	45	
Total A + B + C	1282	37	116	107	115	74	
National Register and/or City Landmarks (b)	31	5	7	5	5	4	
<u>C-3 Totals (with preservation measures)</u>							
Heritage A + B (including National Register and City Landmarks)	422	23	40	2	26	12	
						11 (c)	

(a) See Appendix E for descriptions of ratings in this column.

(b) Totals for Heritage A and Heritage B buildings include National Register and/or City Landmark properties. The V.C. Morris Building is a National Register property, but is not rated by Heritage because it was completed after 1945. It is not included in the corresponding totals shown in this table.

(c) Projection assumes required conditional use permits in conservation districts would be approved.

SOURCE: Roger Owen Boyer & Associates.

TABLE V.H.1.2: PERCENTAGES OF C-3 DISTRICT ARCHITECTURAL RESOURCES SUSCEPTIBLE TO CONVERSION BY 1990 AND 2000

Study Area and Type of Resource (a)	Total Resources In 1984	% 1984 Total Proposed to be Converted by 1990	% 1990 Resources Forecast to Become Vulnerable 1990-2000 ₁				
			1	2	by Alternative 3	4	5
<u>Subarea 1 (without preservation measures)</u>							
Heritage A	47	11	11	9	9	4	6
Heritage B	83	17	24	23	22	17	19
Subtotal A + B (b)	130	15	18	12	17	12	15
Heritage C	111	7	35	33	34	25	31
Total A + B + C	241	11	27	25	25	18	22
National Register and/or City Landmarks (b)	17	24	29	18	18	12	12
<u>Subarea 2-7 (without preservation measures)</u>							
Heritage A	82	2	6	6	5	4	5
Heritage B	210	1	6	5	5	2	3
Subtotal A + B (b)	292	1	6	6	5	3	3
Heritage C	749	1	5	4	5	1	2
Total A + B + C	1041	1	5	5	5	2	2
National Register and/or City Landmarks (b)	14	7	14	14	14	7	14
<u>C-3 Totals (without preservation measures)</u>							
Heritage A	129	5	8	7	6	4	5
Heritage B	293	5	11	10	10	5	8
Subtotal A + B (b)	422	5	10	9	9	6	4
Heritage C	860	2	9	8	9	4	5
Total A + B + C	1282	3	9	8	9	5	6
National Register and/or City Landmarks (b)	31	16	23	16	16	10	13
<u>C-3 Totals (with preservation measures)</u>							
Heritage A + B (including National Register and City Landmarks) (b)	422	5	9	1	6	3	3 (c)

(a) See Appendix E for descriptions of ratings in this column.

(b) Totals for Heritage A and Heritage B buildings include National Register and/or City Landmark properties. The V.C. Morris Building is a National Register property, but is not rated by Heritage because it was completed after 1945. It is not included in the corresponding totals shown in this table.

(c) Projection assumes required conditional use permits in conservation districts would be approved.

SOURCE: Roger Owen Boyer & Associates.

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Downtown District (C-3-0) on a 2:1 basis. Since this Alternative would not limit TDRs to use only on sites adjacent to eligible resources, the use of TDRs would reduce the number of eligible resources susceptible to conversion substantially, from 39 to two. The use of the protective measures of Alternative 2 would result in the lowest number of architectural resources vulnerable to conversion of any of the five Alternatives.

Alternative 3

Without Protective Measures. Under Alternative 3, the total number of vulnerable resources would be 115, almost the same as the 116 forecast for Alternative 1, but higher than the 107 forecast for Alternative 2. Five National Register Properties and/or City Landmarks would be susceptible to conversion, the same as for Alternative 2. A slightly higher rate of demolition of "C"-rated buildings would accompany a lower rate of demolition for National/City Landmarks and "A"- and "B"-rated buildings. The 78 vulnerable "C"-rated buildings would be the highest of any Alternative.

With Protective Measures. Alternative 3 includes a Landmark bonus which would be used for the preservation "in perpetuity" of City Landmarks or National Register Properties within 500 feet of a donee site the C-3 District. This bonus would function similarly to a TDR measure and would reduce the projected number of National Register Properties/City Landmarks and "A"- and "B"-rated buildings susceptible to conversion by about 30 percent, from 37 to about 26.

Alternative 4

Without Protective Measures. The implementation of Alternative 4 is projected to result in the fewest number of conversions of architectural resources. About 62 eligible resources could be converted, reflecting a rate of about six buildings per year. This rate is less than the historic rate of seven to nine buildings per year between 1979 and 1984. Three National Register Properties/City Landmarks would be susceptible to conversion.

With Protective Measures. Under Alternative 4, TDRs from City Landmarks and other rated eligible resources anywhere in the City could be applied to development sites in the Downtown District on a 1:1 basis. The use of TDRs would reduce the projected total number of National/City and "A"- and "B"-rated buildings susceptible to conversion by

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about 50 percent, from 24 to 12. The 1:1 FAR transfer ratio would result, however, in fewer preservation opportunities than the 2:1 ratio proposed in Alternative 2.

Alternative 5

Without Protective Measures. Alternative 5 would result in a conversion rate of about seven eligible resources per year, a lower rate than that of Alternatives 1, 2 and 3, but slightly higher than that of Alternative 4. The projected total of about 74 vulnerable resources would result in an overall reduction of six percent from the number of rated architectural resources in 1990. About four National/City Landmarks and seven "A"-rated buildings would be susceptible to conversion under this Alternative.

With Protective Measures. Under Alternative 5, TDRs would be permitted from eligible resources (architecturally and and/or historically significant buildings) within the same C-3 Districts, or to sites in "special development districts" (Subareas 2 and 4). The projected number of eligible National and City Landmarks and "A"- and "B"-rated buildings susceptible to conversion under this Alternative would drop by about 60 percent, from 29 to about 11, with the use of its protective measures.

Conclusion

Of the five Alternatives, Alternative 1 would afford the least protection for architectural resources. The height and bulk limit regulations of Alternative 1 would generally allow the largest buildings of any Alternative, and would result in the greatest number of resource conversions.

Alternatives 3 and 4 would have the lowest allowable floor area ratios, yet Alternative 3 would allow a number of conversions similar to that of Alternative 1, since a comparable number of sites would be developed.

Alternatives 4 and 5 would result in the fewest conversions of architectural resources. Alternative 4 would threaten the fewest architectural resources in almost every rating category and geographic subarea. These Alternatives combine generally downscaled height and bulk districts with the downzoning of certain areas. Alternative 4 would extend the C-2 Jackson Square District into the C-3-0 Downtown Office District, and

V. Environmental Impacts

would rezone sections of the Tenderloin and South of Market to residential and commercial use. As a result, fewer sites would be developed. Alternative 5 would also rezone all or portions of the Tenderloin and South of Market, and would expand the C-3-R District and reduce height limits along Kearny Street.

Under each Alternative, the greatest numbers of vulnerable architectural resources would be concentrated in the Downtown Office District (Subarea 1). This is indicated by the land use and real estate development forecasts (see Section V.B), which predict that the bulk of new office construction will be in the Downtown Office District, and by the fact that this district contains the highest concentration of architectural resources in the C-3 District.

NOTES - Architectural Resources

- /1/ As used in this section, "conversion" is defined as demolition or substantial alteration of an existing building, including its vertical incorporation in whole or in part in new construction. This use of the term is different from that in Land Use and Real Estate Development where conversion means generally a change in building use (see Glossary).
- /2/ Article 1.2, Section 127, of the City and County of San Francisco Planning Code, states that TDR's from City Landmarks may only be transferred within the C-3-0 District, and to adjacent lots within that district. These provisions do not apply where the lot to receive the TDR is occupied by a historical, architectural or aesthetic landmark that has been so designated by the Board of Supervisors pursuant to Article 10 of the Code. The aggregate of all such transfers from one adjacent lot to all other lots shall be no more than one-half the basic floor area that would be permitted on the adjacent lot.

2. STREETSCAPE AND PEDESTRIAN AMENITIES

Introduction

Recent development in the C-3 District has generally tended to increase the degree of street enclosure and the intensity of street activity, especially in the Central Office District. While the streetscape continues to be the focus for urban activity, continued new development heightens issues of the quality of change in the City's street environment. Congestion, loss of sunlight, increased wind levels, demolition of architectural resources, inadequate provision for pedestrian amenities, and mediocre architectural design are common concerns related to the streetscape. The impact of building development on the streetscape depends largely on the scale and form of building design and the limitations, requirements and incentives of zoning regulations and City policy. Each of the five Alternatives include bonuses and requirements to encourage building design which contributes to the quality of the street environment.

The Comprehensive Plan also includes objectives and policies pertaining to the street environment. For example, Policy 4 of the Commerce and Industry Element (p. IV.A.5) states that the concept of the bonuses permitting greater floor areas in return for amenities such as open space, pedestrian access, and activity areas for public use, should be extended to insure the development of amenities for downtown residents as well as for the workday population.

The policies of the Comprehensive Plan, especially its Urban Design Element, and other urban design criteria were used to establish the zoning requirements and bonuses outlined in each Alternative. A complete description of the provisions of each Alternative is provided in Section III. These provisions influence the quality of the pedestrian environment and their impacts are discussed below.

1990

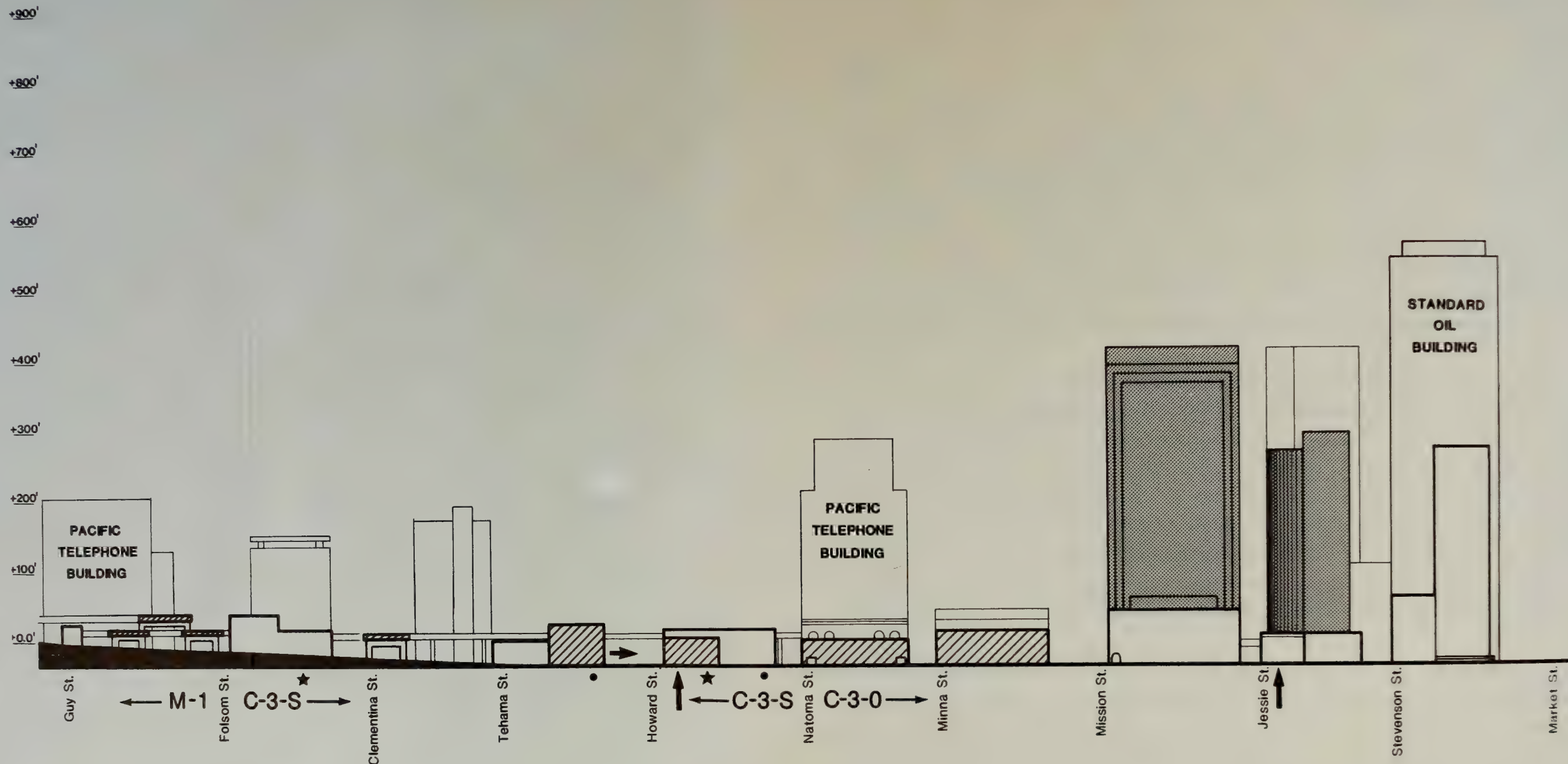
Buildings under construction, approved and under formal review in 1982 comprise the basic development activity that is projected to occur by the year 1990. These buildings would not be directly affected by guidelines contained in the five Alternatives, except to the extent that Alternative 5, Guiding Downtown Development, has already influenced the designs of several of them.

2000

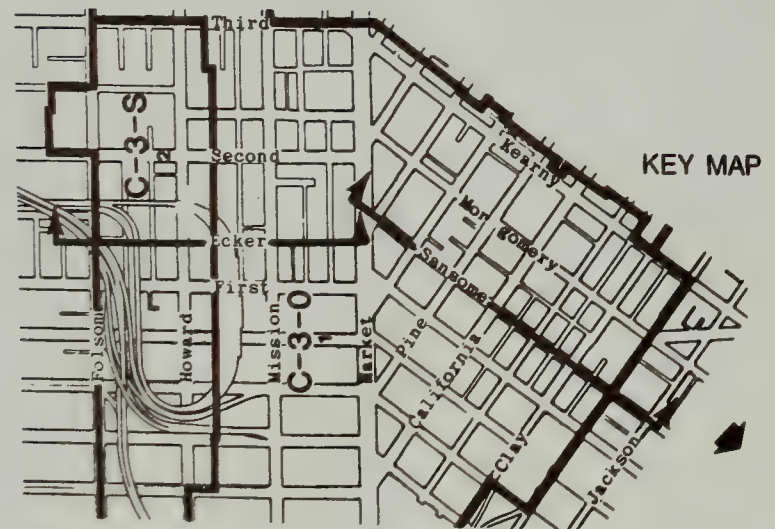
Using projections for the quantity of development forecast in the Land Use and Real Estate Development analysis for Alternatives 1 through 5, and the development guidelines for these Alternatives, potential building designs for several sites of opportunity along Sansome and Ecker Streets were developed. These designs are illustrated in Figures V.H.2.2 through V.H.2.6, which are based upon the similar Figure, IV.H.2.1, in the setting section of this report. The figures also show the period in which the buildings are forecast to be built, as represented by various gray tones, the darkest representing 1990 to 2000. The lighter tone indicates buildings constructed during the 1984 to 1990 period.

The vertical arrows at the case study locations indicate photo locations for the fisheye photos used in the sunpath analyses described in Section V.H.3. Horizontal arrows at the same locations locate street level view points for the illustrations of street views shown in Figures V.H.2.7 - V.H.2.13. These street views, combined with the cross-section diagrams, illustrate typical impacts of the Alternatives on the street environment. For the purposes of the 1990-2000 analysis, existing buildings are assumed to be demolished on the case study sites of opportunity and new buildings constructed in their place. These sites were selected for their apparent economic developability although no plans for the redevelopment of the sites were known by the authors to exist at the time of writing.

The buildings shown in the street views and the cross-sections are designed in accordance with the provisions of the Alternatives. The principal additional design assumptions underlying each design are that the developer will build the maximum square footage that is economically feasible under the given Alternative, and that the developer will build the fewest number of floors feasible in achieving the maximum feasible square footage. These assumptions are established for economic reasons that are typical of new development, particularly office buildings. The layouts of buildings shown are also based on the prototypes developed in the construction feasibility analysis described in Appendix D. Within these constraints, the maximum building development is shown for each site of opportunity located along the cross-section. The regulations and bonuses used in the designs for the two case study sites are shown in Table V.H.2.1. The cross-sections and street views illustrate the possibilities for design solutions using the above criteria for each Alternative. The compliance of each Alternative with the Master Plan Policies and related amenity criteria is assessed in Table V.H.2.2.

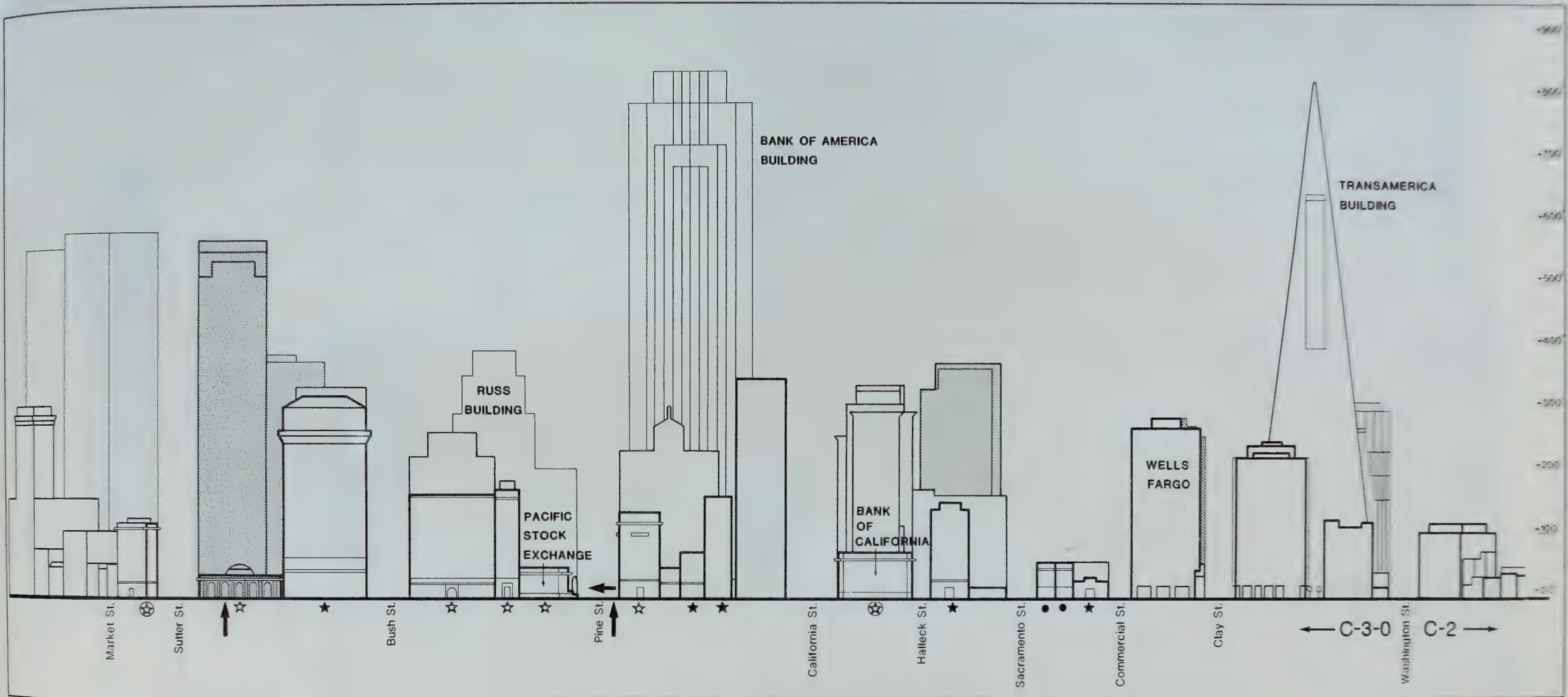


ECKER STREET SECTION (Looking Southwest)



- DEPTH OF IMAGE**
- BUILDING IN SECTION
 - BUILDING AT STREET FRONTAGE
 - BUILDING AT DEPTH OF UP TO ONE BLOCK
 - BUILDING AT DEPTH OF MORE THAN ONE BLOCK

- ARCHITECTURAL RESOURCES**
- CITY LANDMARK
 - HERITAGE A
 - HERITAGE B
 - HERITAGE C



SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

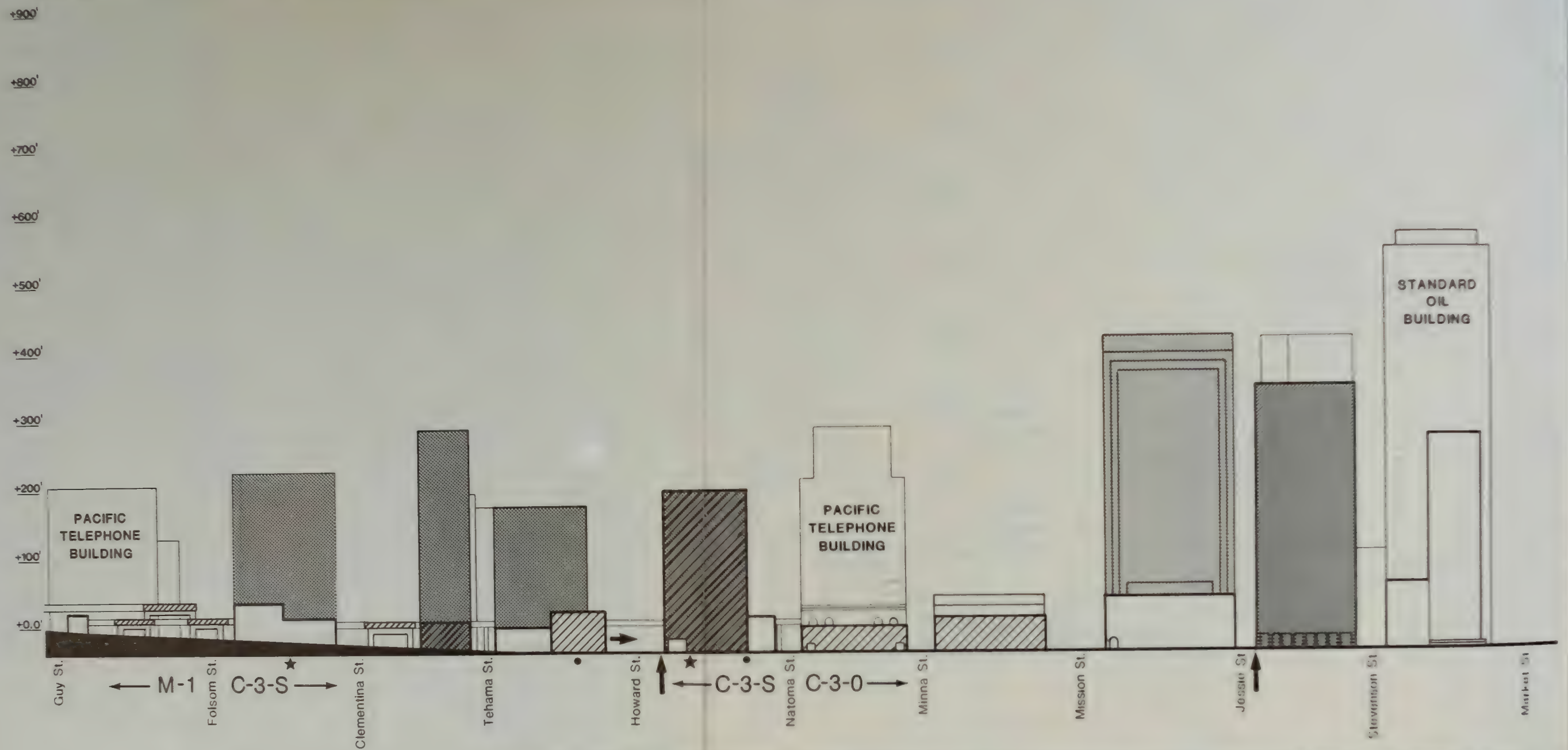
- BEFORE 1983
- 1983-1984
- 1985-1990

PHOTO LOCATIONS

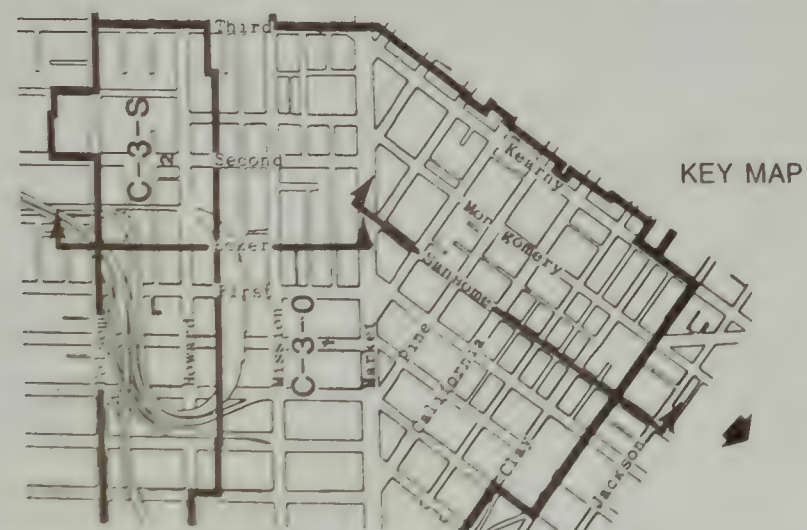
- LOCATION OF STREET-LEVEL PHOTO
(See Figures IV.H.2.2, IV.H.2.3 and V.H.2.7-V.H.2.13)
- LOCATION OF FISHEYE PHOTO
(See Figures IV.H.3.1-IV.H.3.4 and V.H.3.1-V.H.3.5)

**FIGURE V.H.2.1:
C-3 DISTRICT STREETScape, 1990**

SOURCE: Roger Owen Sawyer and Associates



ECKER STREET SECTION (Looking Southwest)

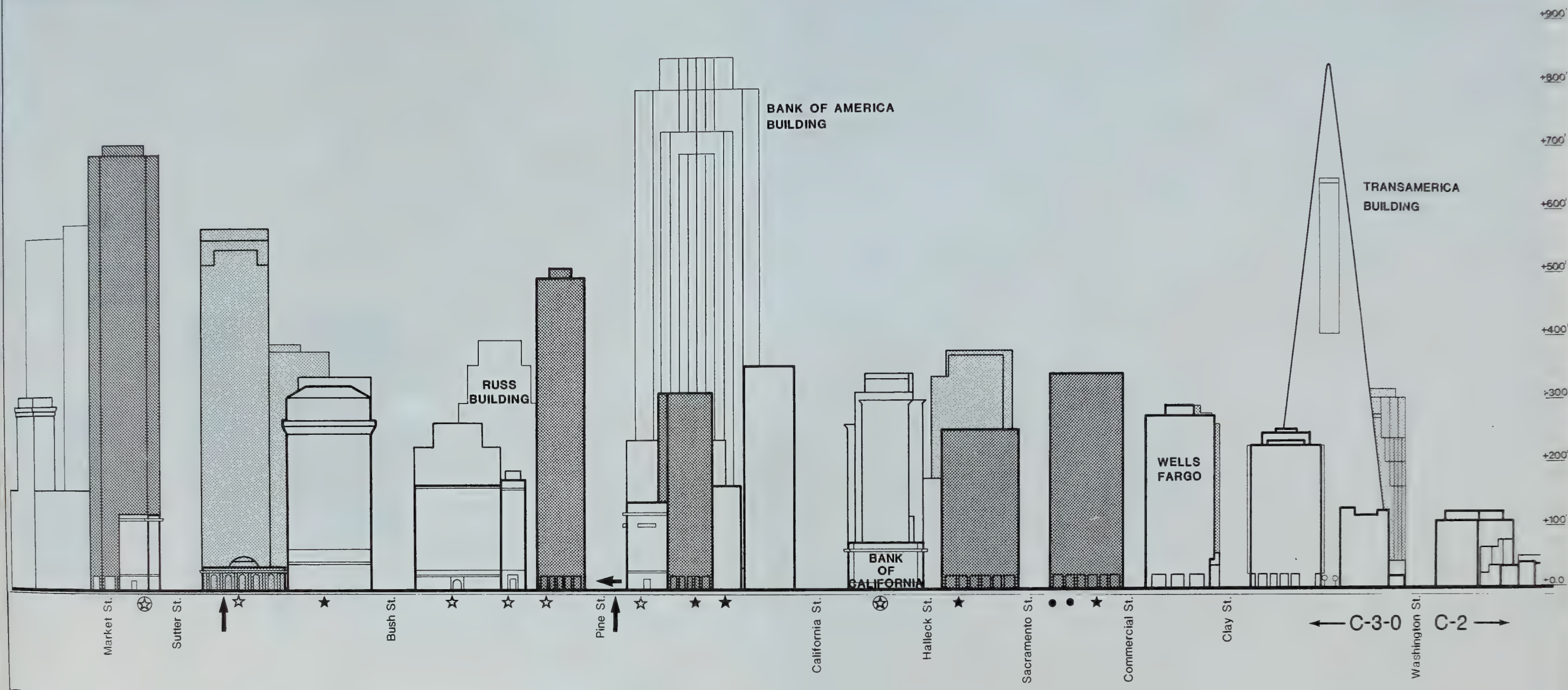


DEPTH OF IMAGE

- BUILDING IN SECTION
- BUILDING AT STREET FRONTAGE
- BUILDING AT DEPTH OF UP TO ONE BLOCK
- BUILDING AT DEPTH OF MORE THAN ONE BLOCK

ARCHITECTURAL RESOURCES

- CITY LANDMARK
- HERITAGE A
- HERITAGE B
- HERITAGE C



SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

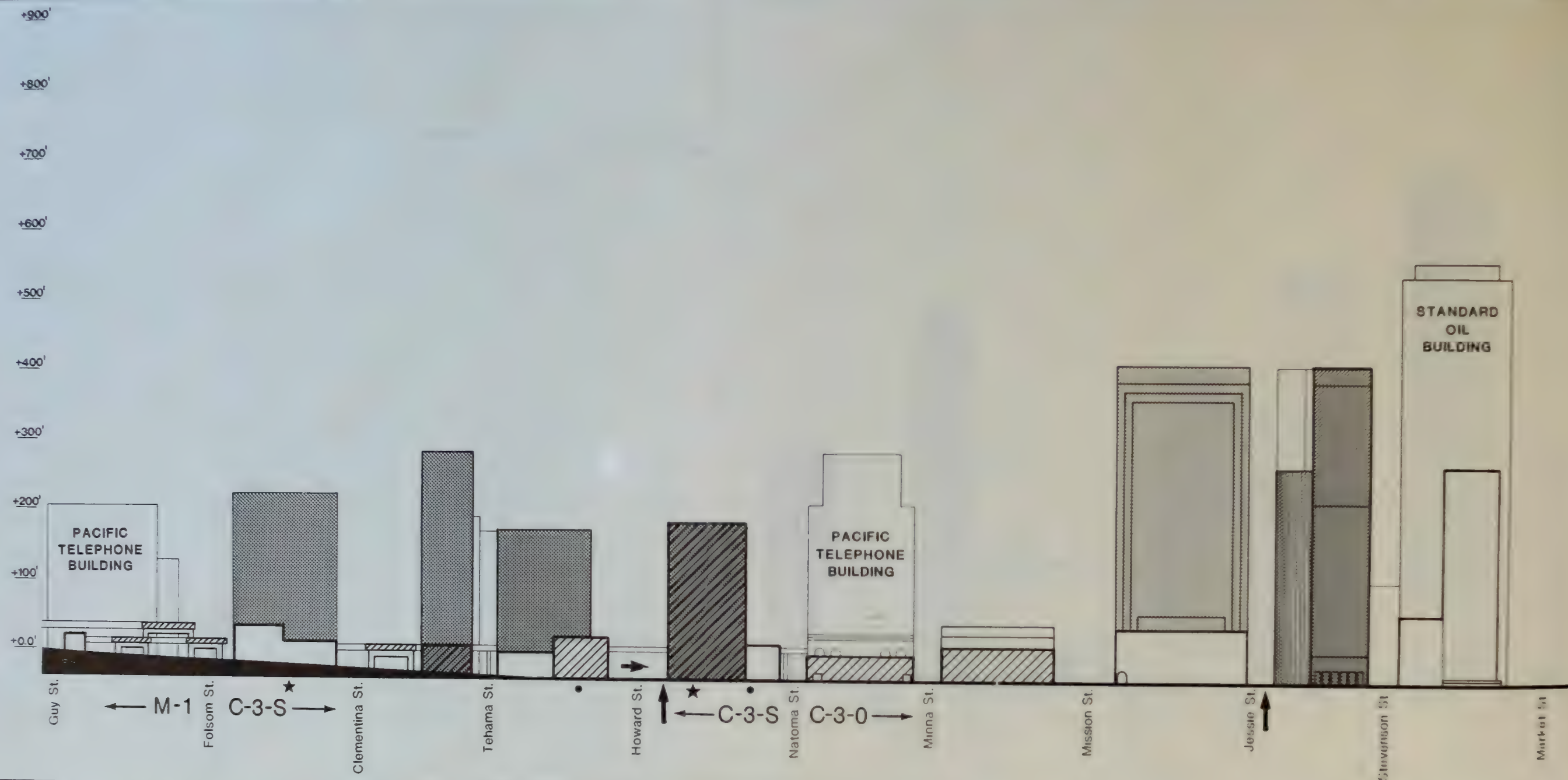
- BEFORE 1983
- 1983-1984
- 1985-1990
- 1991-2000

PHOTO LOCATIONS

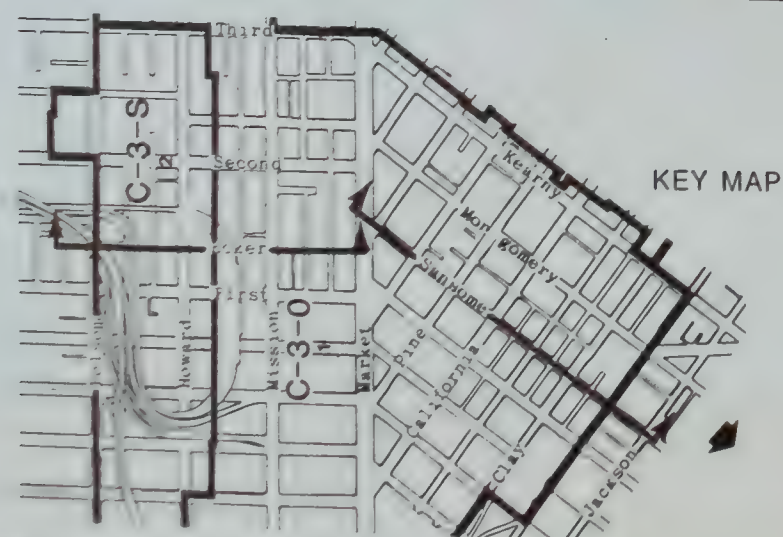
- LOCATION OF STREET-LEVEL PHOTO
(See Figures IV.H.2.2, IV.H.2.3 and V.H.2.7-V.H.2.13)
- LOCATION OF FISHEYE PHOTO
(See Figures IV.H.3.1-IV.H.3.4 and V.H.3.1-V.H.3.5)

**FIGURE V.H.2.2:
C-3 DISTRICT STREETScape,
ALTERNATIVE 1, 2000**





SOURCE: Roger Owen Boyer and Associates







ECKER STREET SECTION (Looking Southwest)

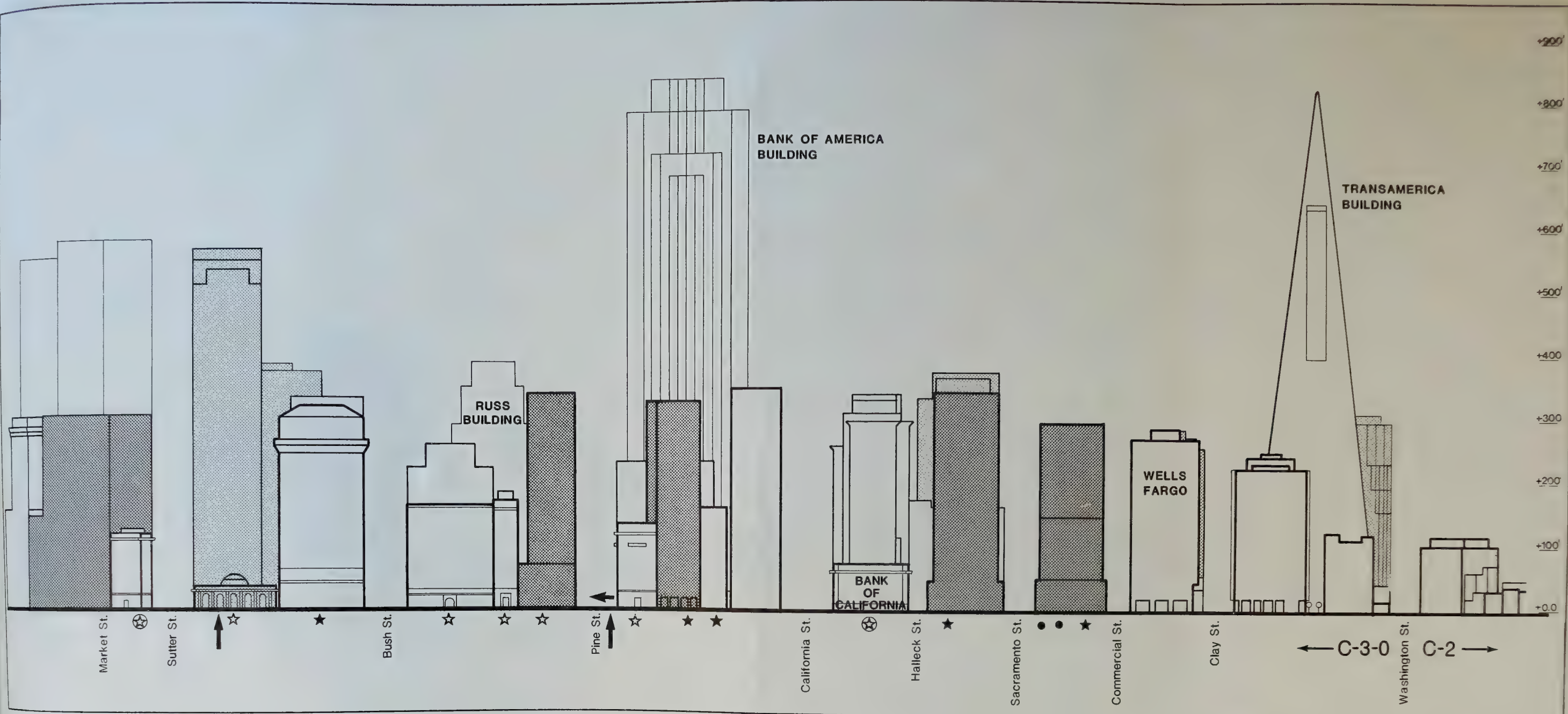


DEPTH OF IMAGE

-  BUILDING IN SECTION
-  BUILDING AT STREET FRONTAGE
-  BUILDING AT DEPTH OF UP TO ONE BLOCK
-  BUILDING AT DEPTH OF MORE THAN ONE BLOCK

ARCHITECTURAL RESOURCES

-  CITY LANDMARK
-  HERITAGE A
-  HERITAGE B
-  HERITAGE C



SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

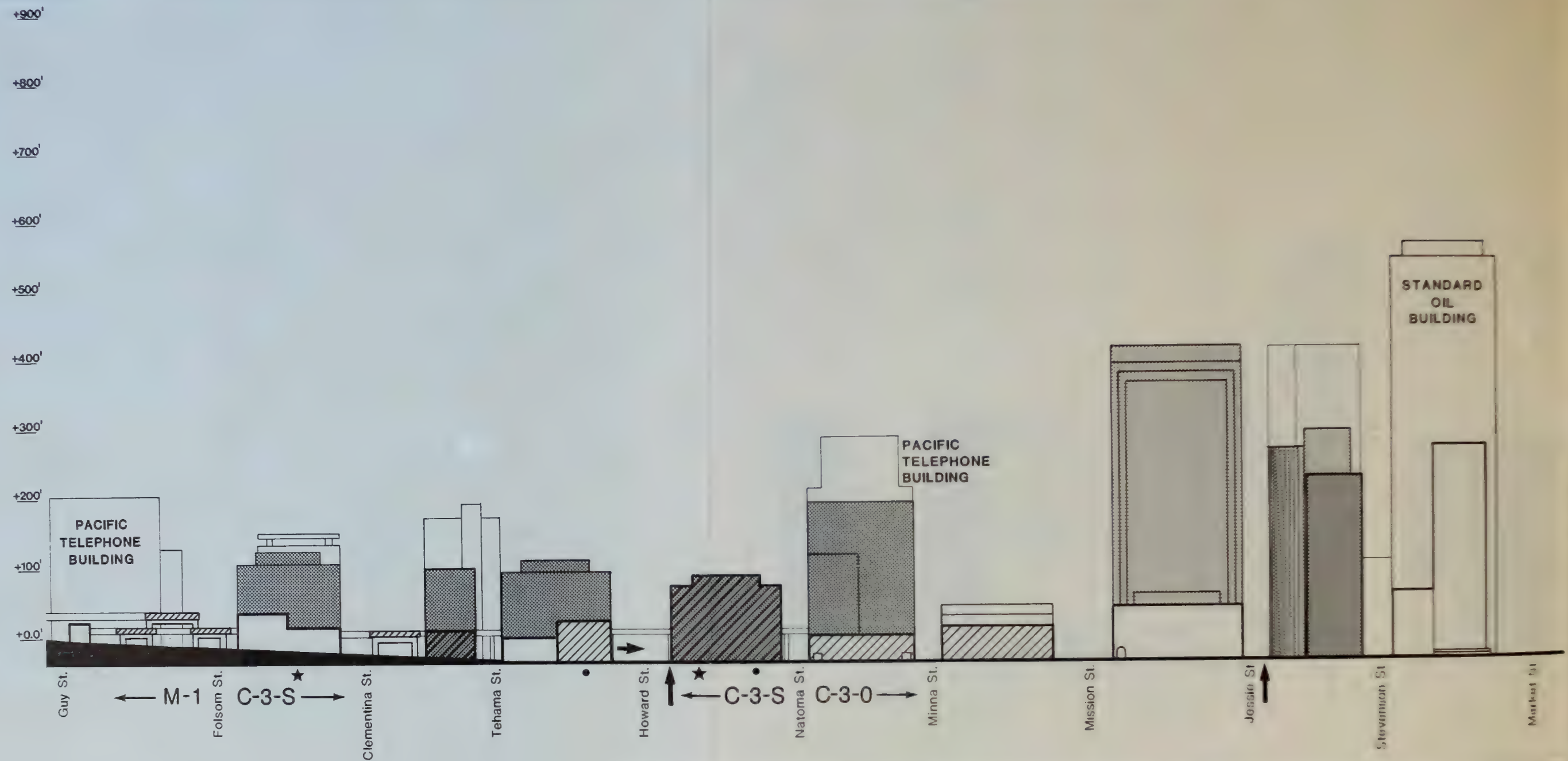
- BEFORE 1983
- 1983-1984
- 1985-1990
- 1991-2000

PHOTO LOCATIONS

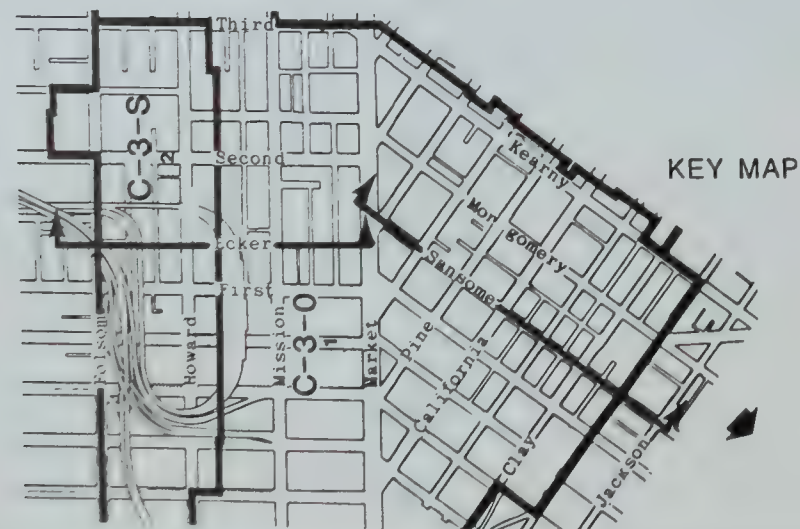
- LOCATION OF STREET-LEVEL PHOTO
(See Figures IV.H.2.2, IV.H.2.3 and V.H.2.7-V.H.2.13)
- LOCATION OF FISHEYE PHOTO
(See Figures IV.H.3.1-IV.H.3.4 and V.H.3.1-V.H.3.5)

**FIGURE V.H.2.3:
C-3 DISTRICT STREETScape,
ALTERNATIVE 2, 2000**





SOURCE: Roger Owen Boyer and Associates







ECKER STREET SECTION (Looking Southwest)

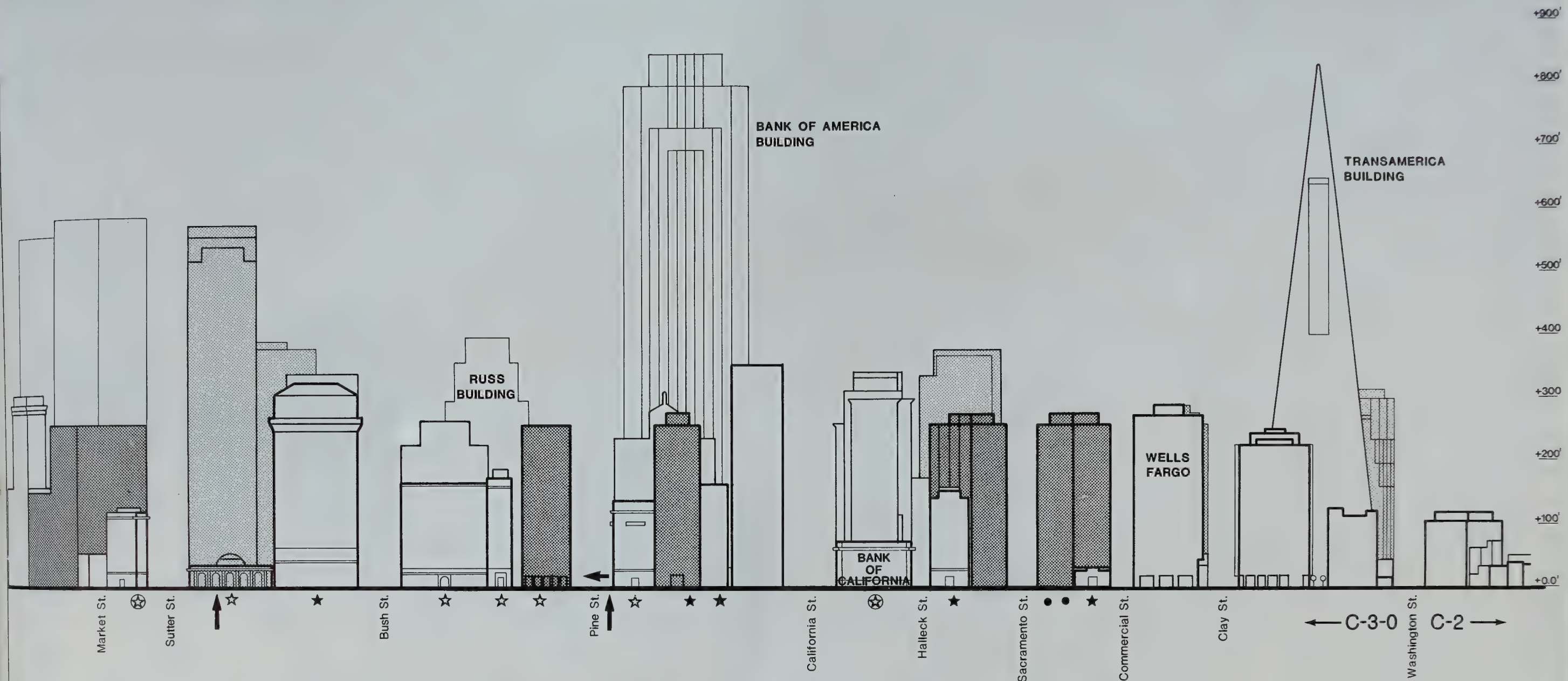


DEPTH OF IMAGE

-  BUILDING IN SECTION
-  BUILDING AT STREET FRONTAGE
-  BUILDING AT DEPTH OF UP TO ONE BLOCK
-  BUILDING AT DEPTH OF MORE THAN ONE BLOCK

ARCHITECTURAL RESOURCES

-  CITY LANDMARK
-  HERITAGE A
-  HERITAGE B
-  HERITAGE C



SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

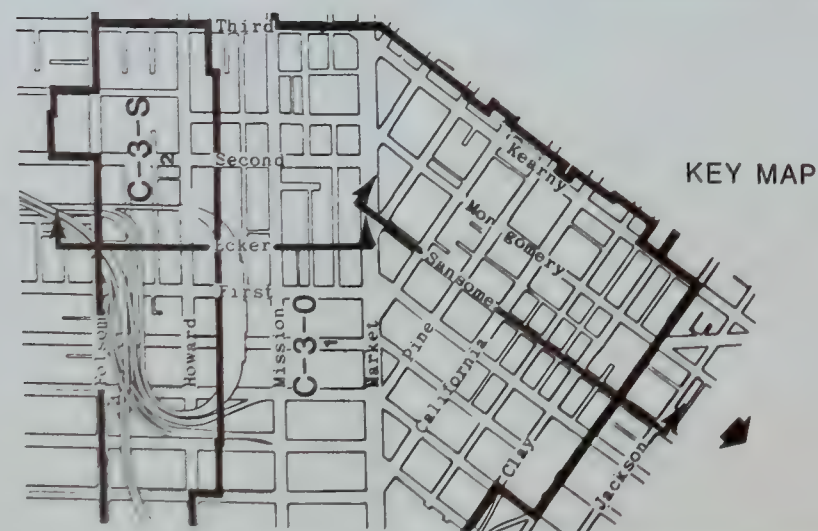
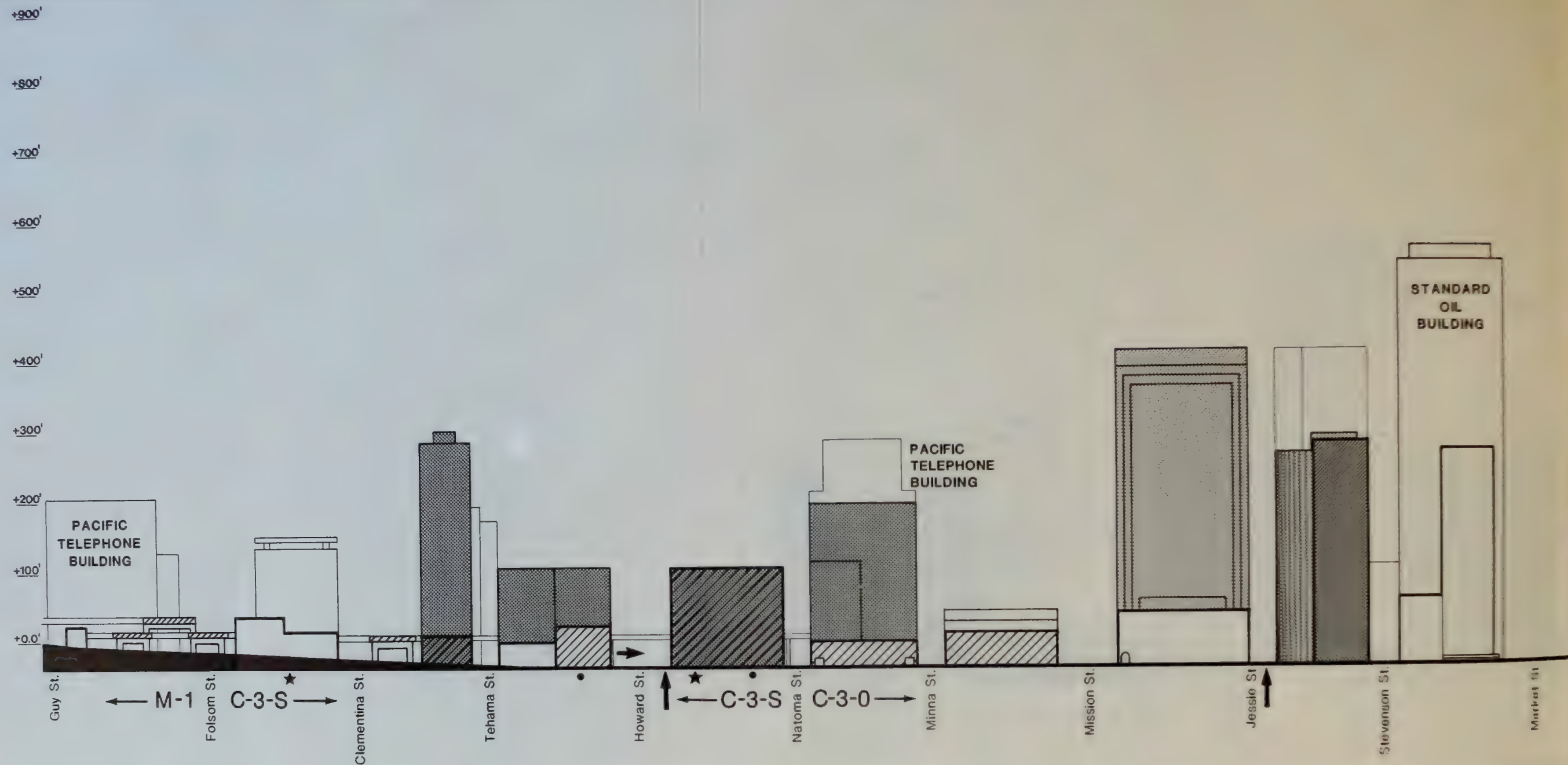
- BEFORE 1983
- 1983-1984
- 1985-1990
- 1991-2000

PHOTO LOCATIONS

- LOCATION OF STREET-LEVEL PHOTO
(See Figures IV.H.2.2, IV.H.2.3 and V.H.2.7-V.H.2.13)
- LOCATION OF FISHEYE PHOTO
(See Figures IV.H.3.1-IV.H.3.4 and V.H.3.1-V.H.3.5)

**FIGURE V.H.2.4:
C-2 DISTRICT STREETScape,
ALTERNATIVE 3, 2000**

SOURCE: Roger Owen Boyer and Associates



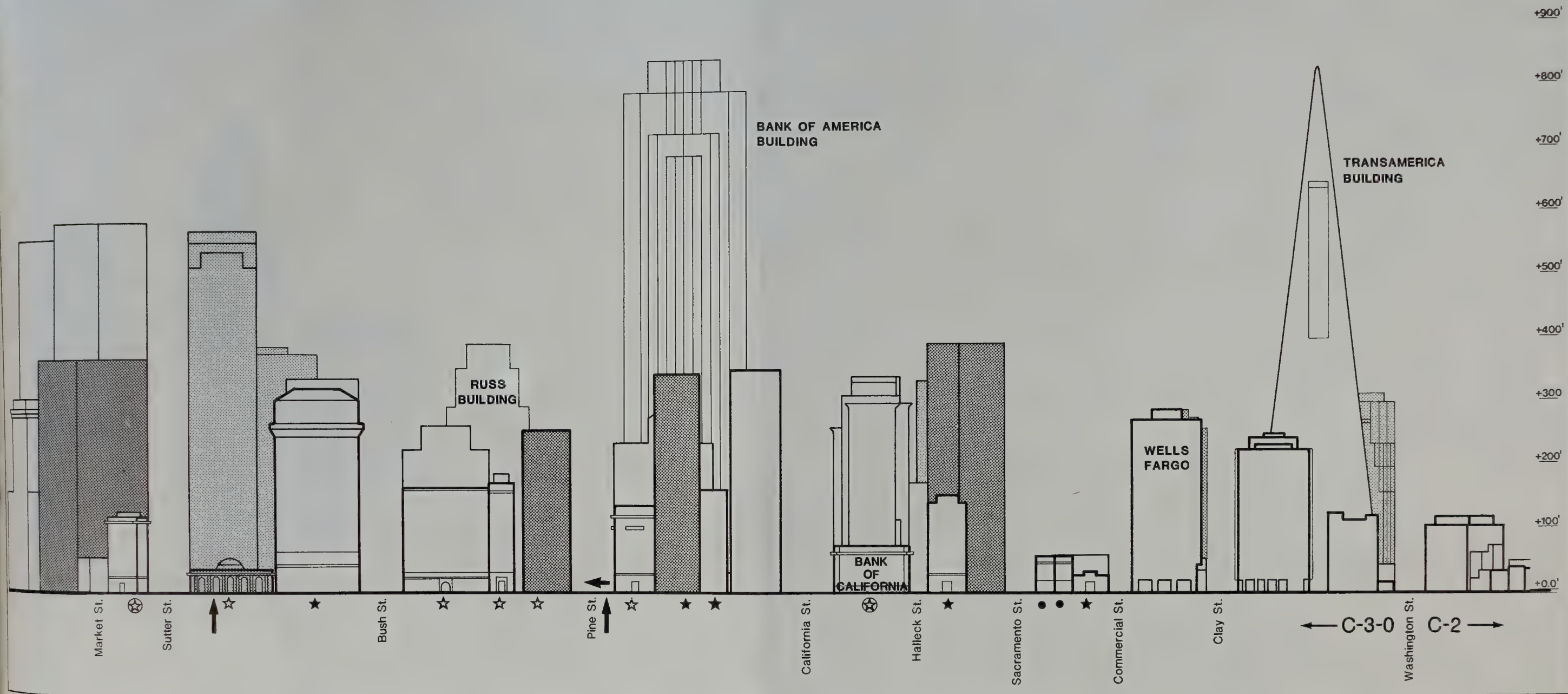
ECKER STREET SECTION (Looking Southwest)

DEPTH OF IMAGE

- BUILDING IN SECTION
- BUILDING AT STREET FRONTAGE
- BUILDING AT DEPTH OF UP TO ONE BLOCK
- BUILDING AT DEPTH OF MORE THAN ONE BLOCK

ARCHITECTURAL RESOURCES

- CITY LANDMARK
- HERITAGE A
- HERITAGE B
- HERITAGE C



SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

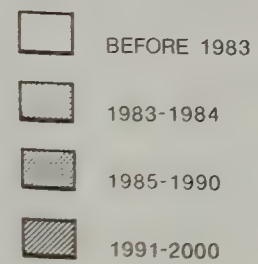
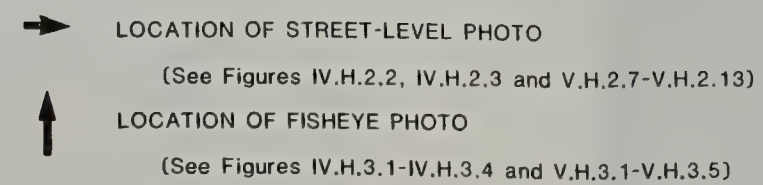
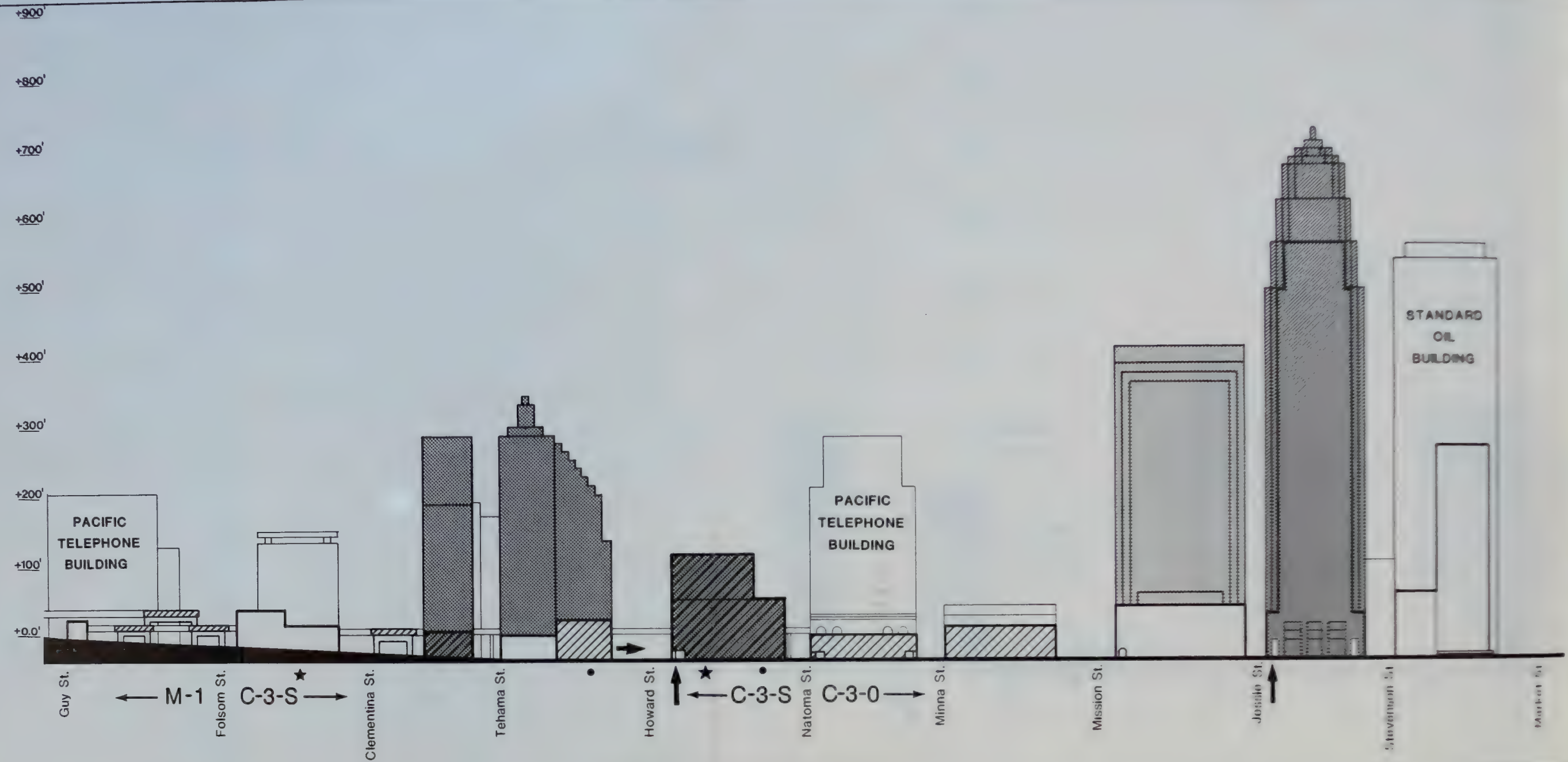


PHOTO LOCATIONS

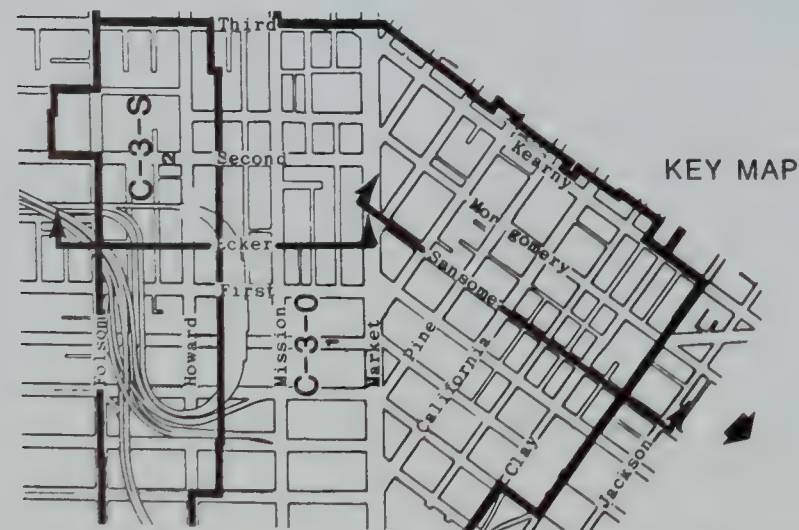


**FIGURE V.H.2.5:
C-3 DISTRICT STREETSCAPE,
ALTERNATIVE 4, 2000**





SOURCE: Roger Owen Boyer and Associates







ECKER STREET SECTION (Looking Southwest)

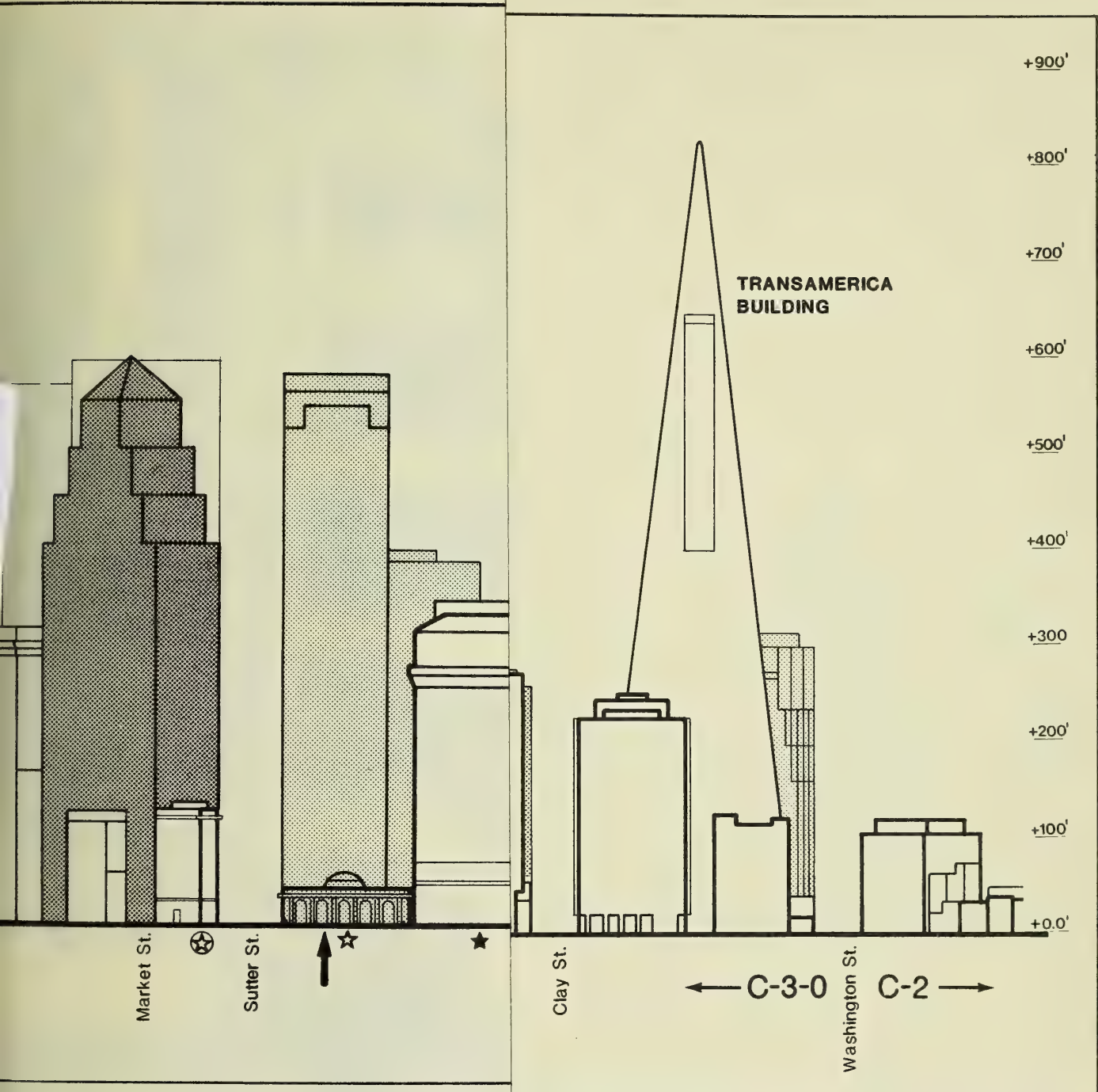


DEPTH OF IMAGE

-  BUILDING IN SECTION
-  BUILDING AT STREET FRONTAGE
-  BUILDING AT DEPTH OF UP TO ONE BLOCK
-  BUILDING AT DEPTH OF MORE THAN ONE BLOCK

ARCHITECTURAL RESOURCES

-  CITY LANDMARK
-  HERITAGE A
-  HERITAGE B
-  HERITAGE C



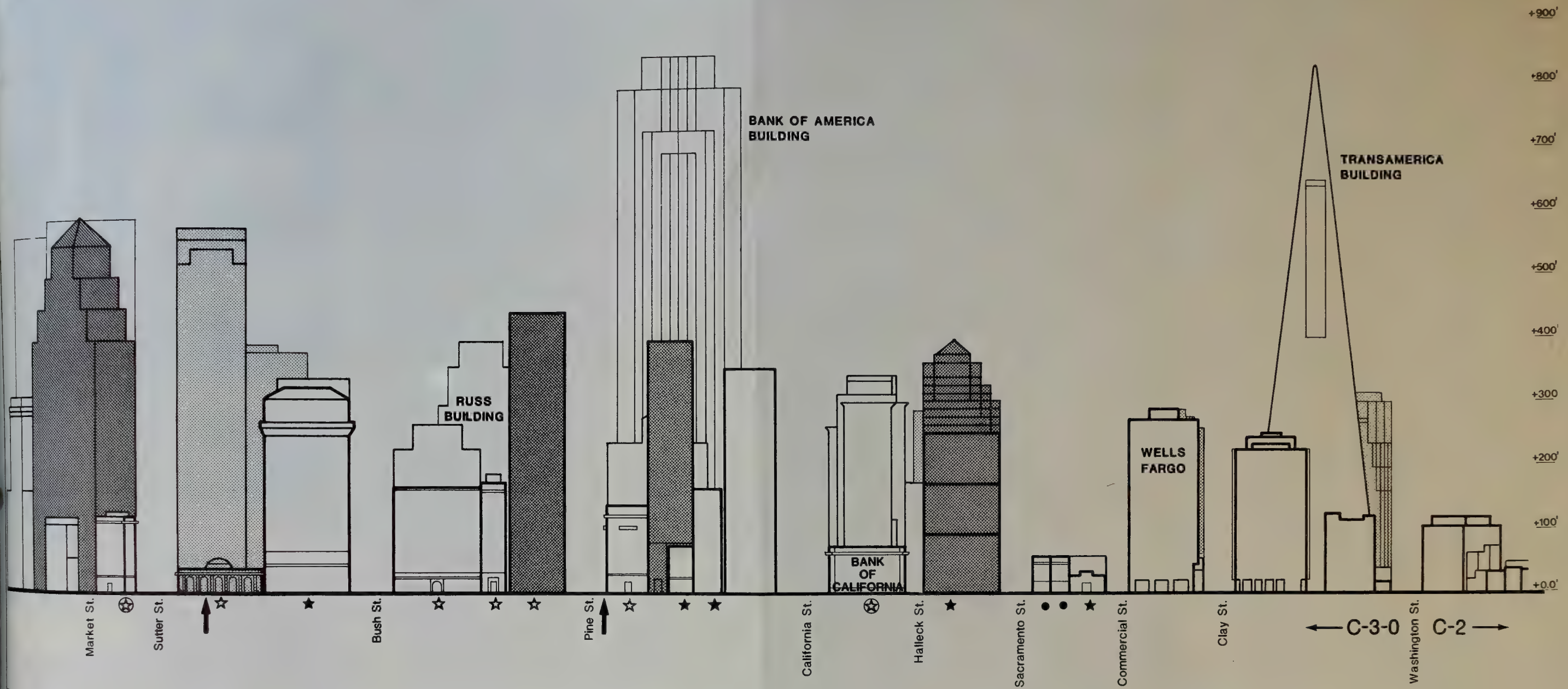
TIME OF BUILDING COMPLETION

- BEFORE 1983
- 1983-1984
- 1985-1990
- 1991-2000

FIGURE V.H.2.6:

C-3 DISTRICT STREETScape, ALTERNATIVE 5, 2000

SOURCE: Roger Owen Boyer and Associates





SANSOME STREET SECTION (Looking West)

TIME OF BUILDING COMPLETION

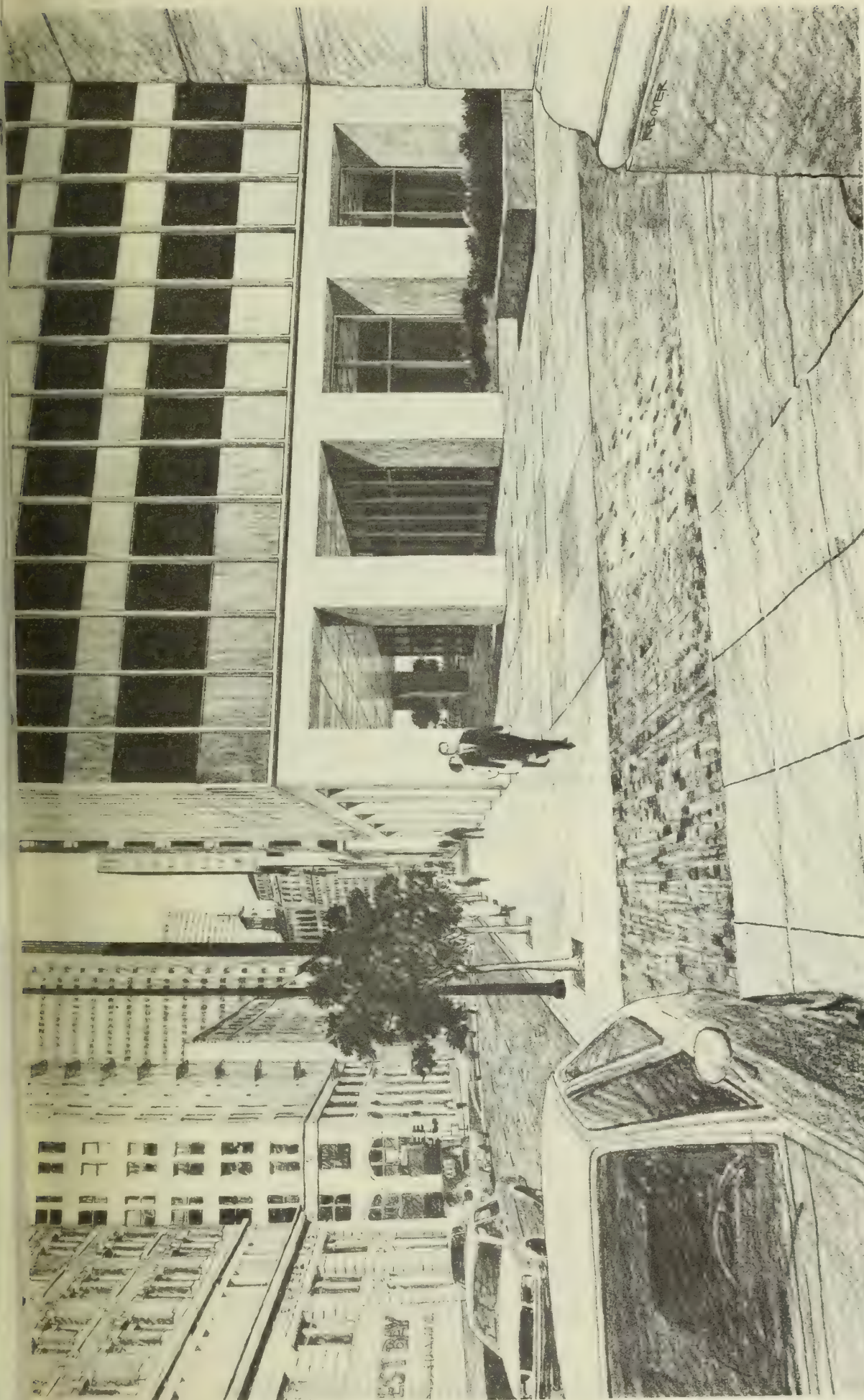
-  BEFORE 1983
-  1983-1984
-  1985-1990
-  1991-2000

PHOTO LOCATIONS

-  LOCATION OF STREET-LEVEL PHOTO
(See Figures IV.H.2.2, IV.H.2.3 and V.H.2.7-V.H.2.13)
-  LOCATION OF FISHEYE PHOTO
(See Figures IV.H.3.1-IV.H.3.4 and V.H.3.1-V.H.3.5)

**FIGURE V.H.2.6:
C-3 DISTRICT STREETSCAPE,
ALTERNATIVE 5, 2000**

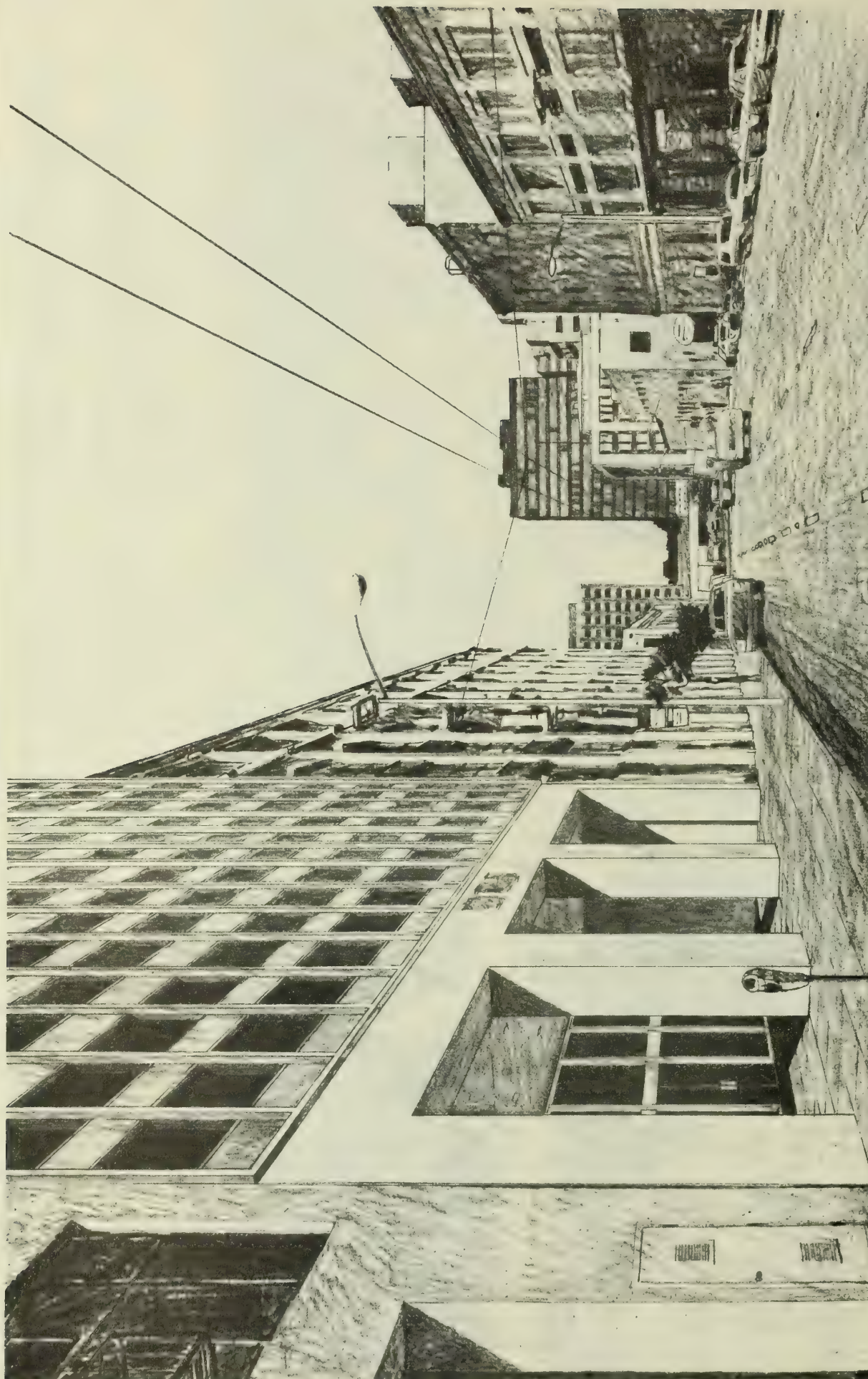
SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

**FIGURE V.H.2.7:
PINE STREET/SANSOME STREET
INTERSECTION, ALTERNATIVE 1, 2000**

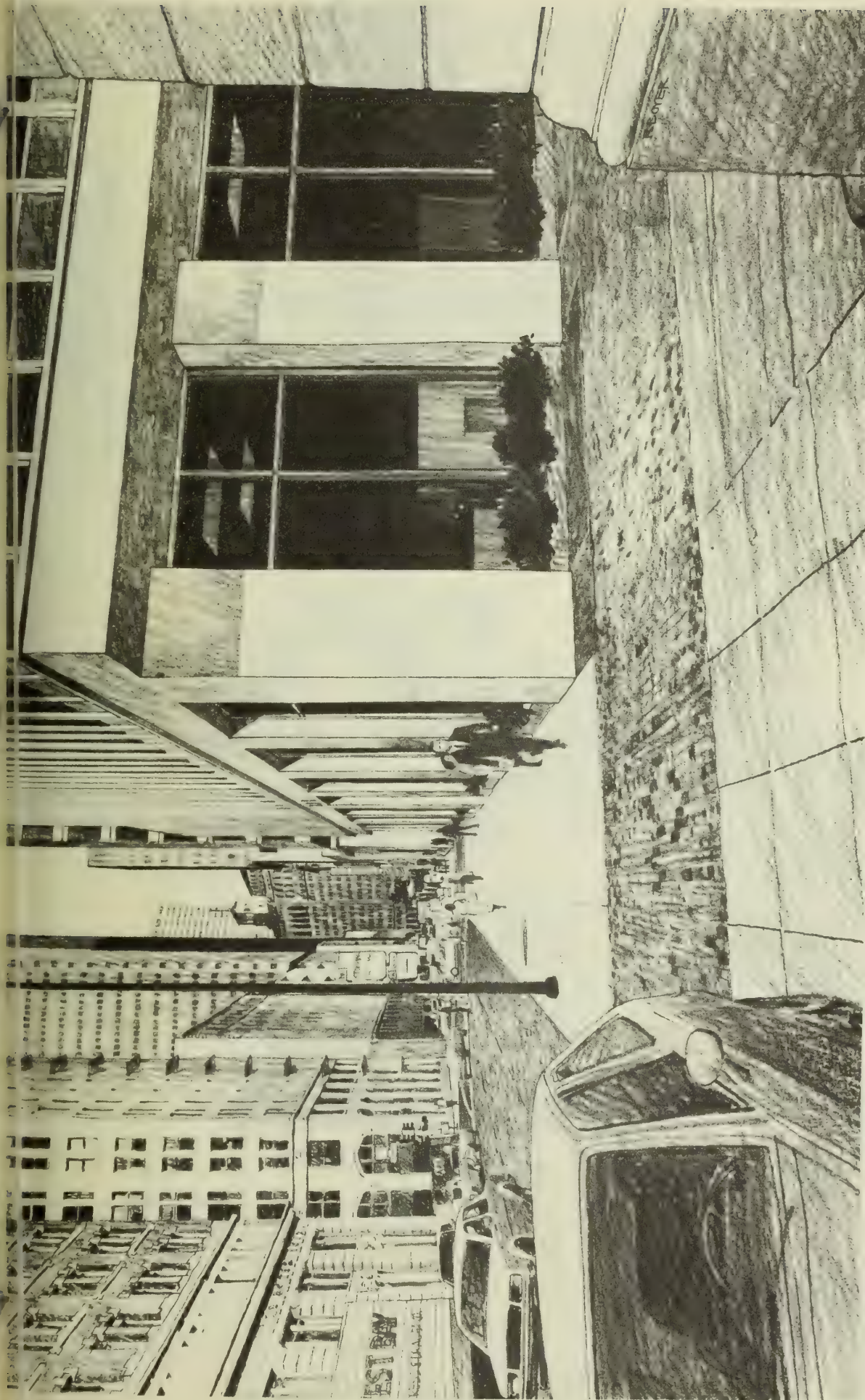
SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

**FIGURE V.H.2.8:
522/528 HOWARD STREET,
ALTERNATIVES 1 AND 5, 2000**

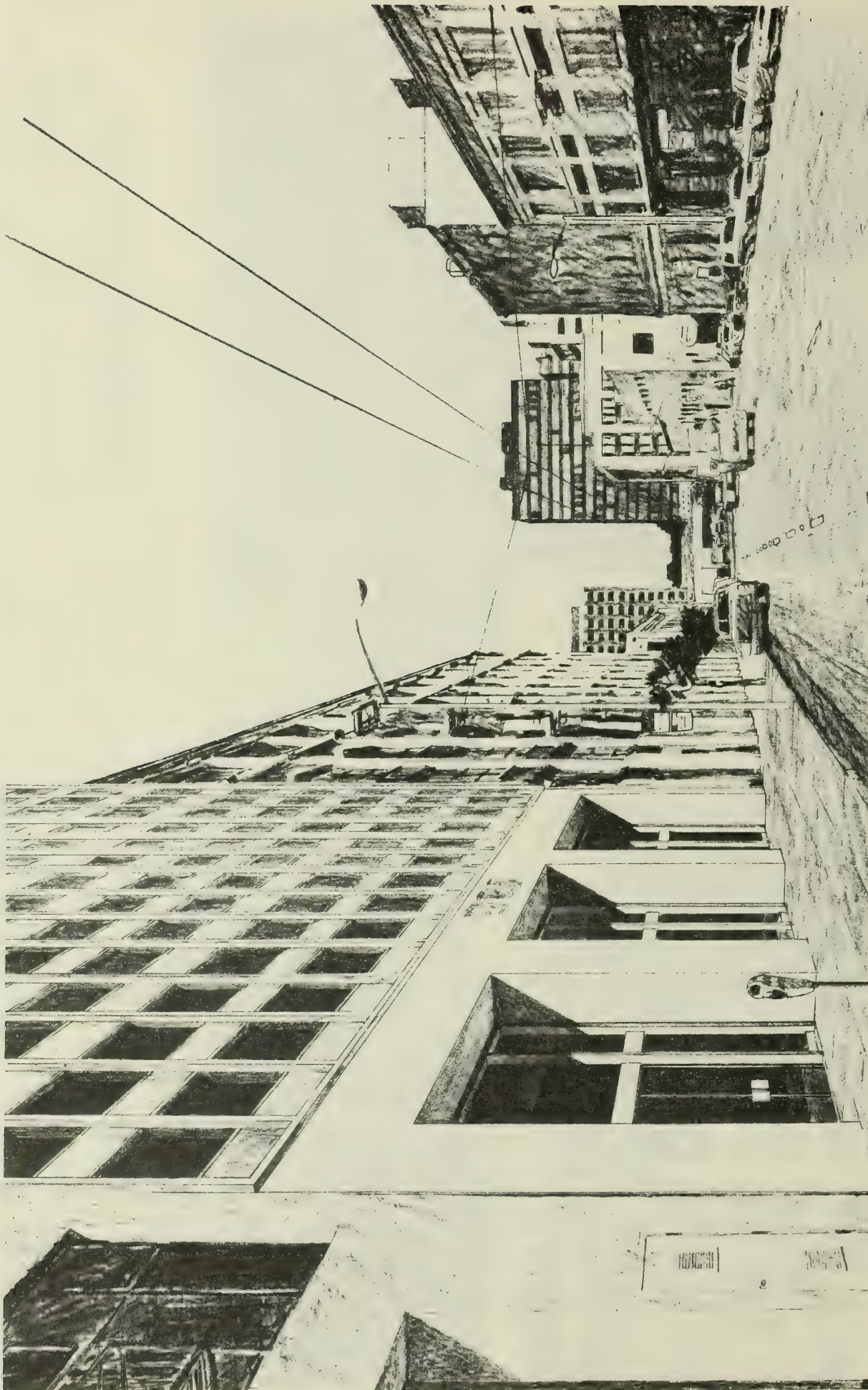
SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

**FIGURE V.H.2.9:
PINE STREET/SANSOME STREET
INTERSECTION, ALTERNATIVE 2, 2000**

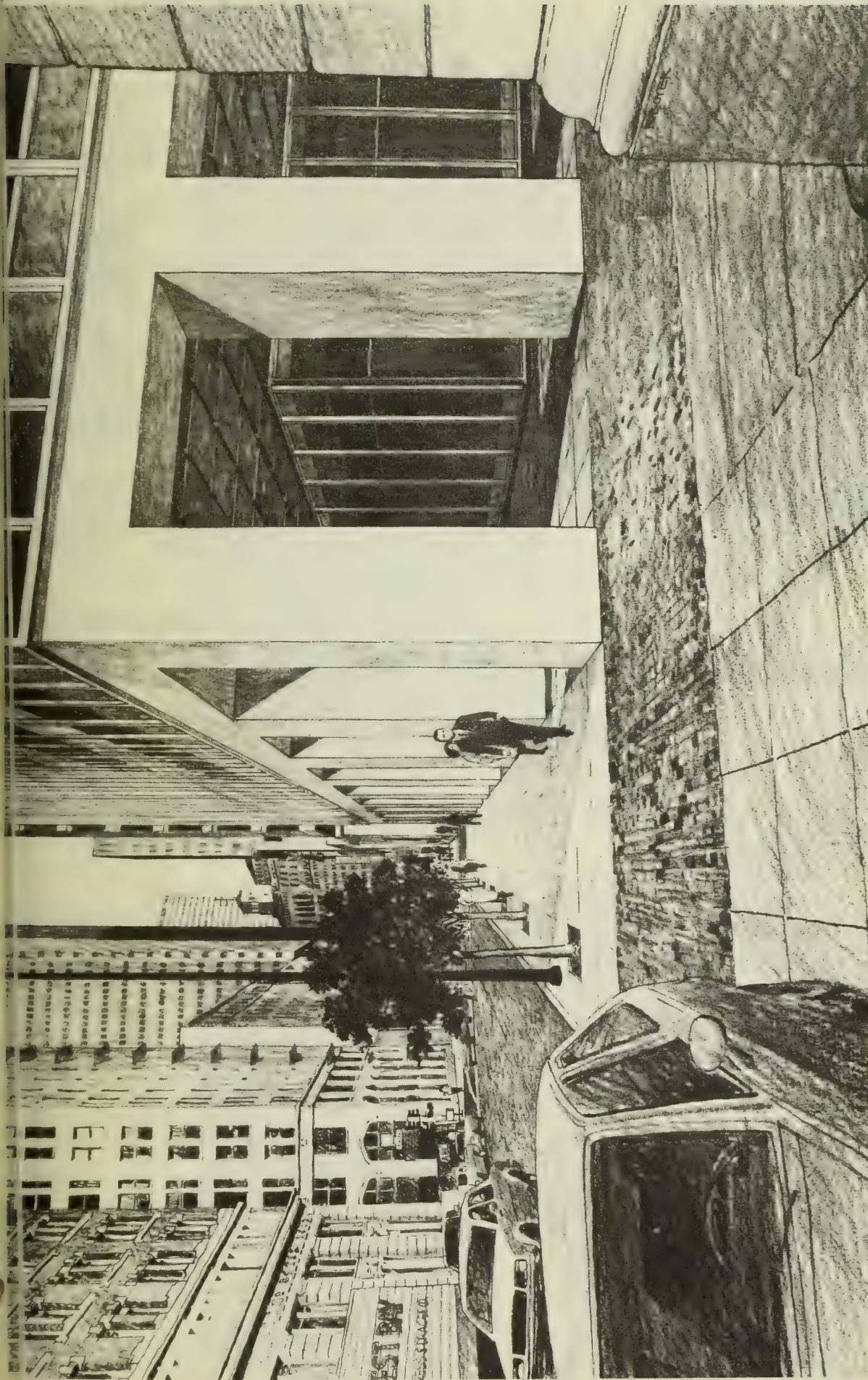
SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

**FIGURE V.H.2.10:
522/528 HOWARD STREET,
ALTERNATIVES 2, 3 AND 4, 2000**

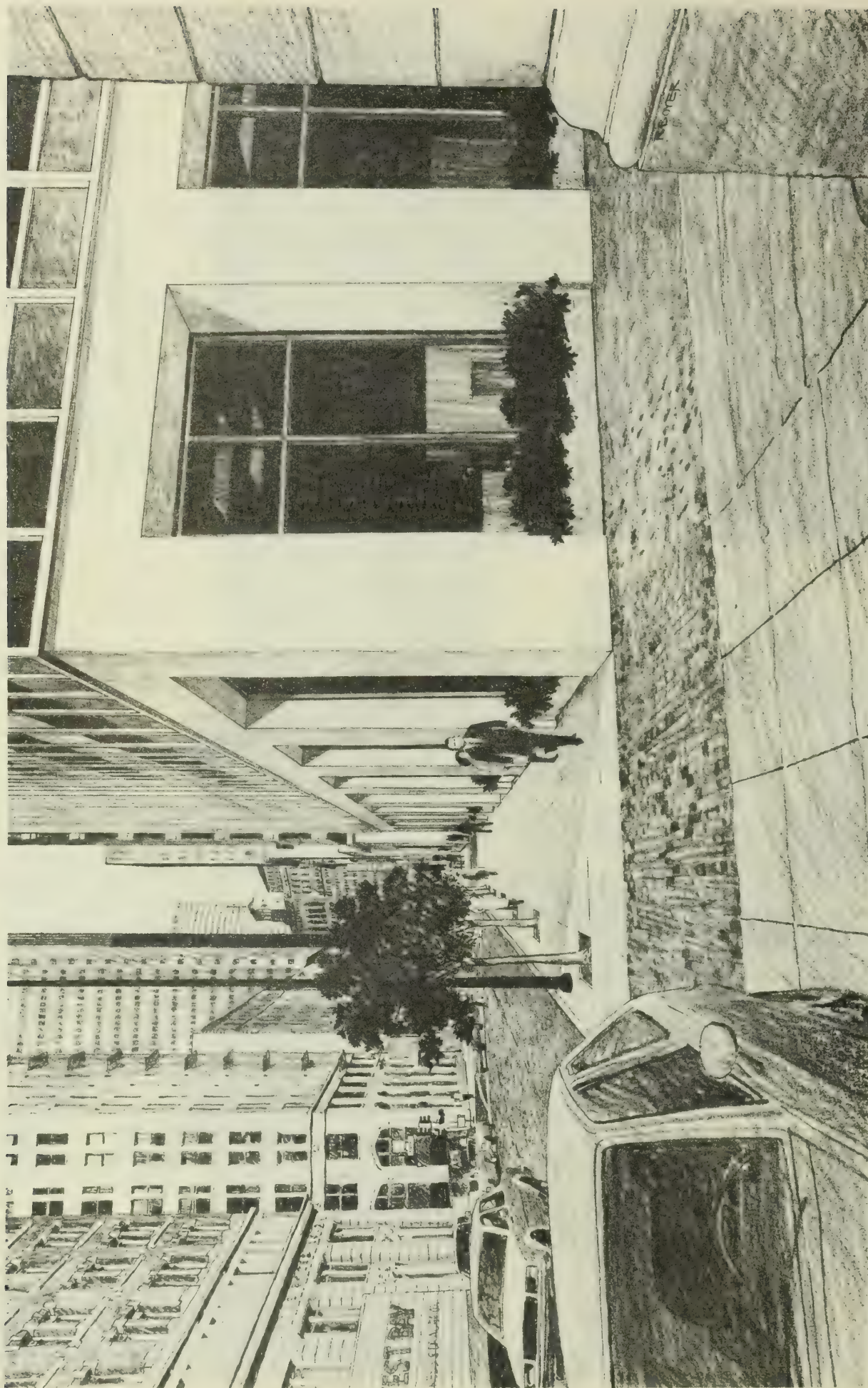
SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

**FIGURE V.H.2.11:
PINE STREET/SANSOME STREET
INTERSECTION, ALTERNATIVE 3, 2000**

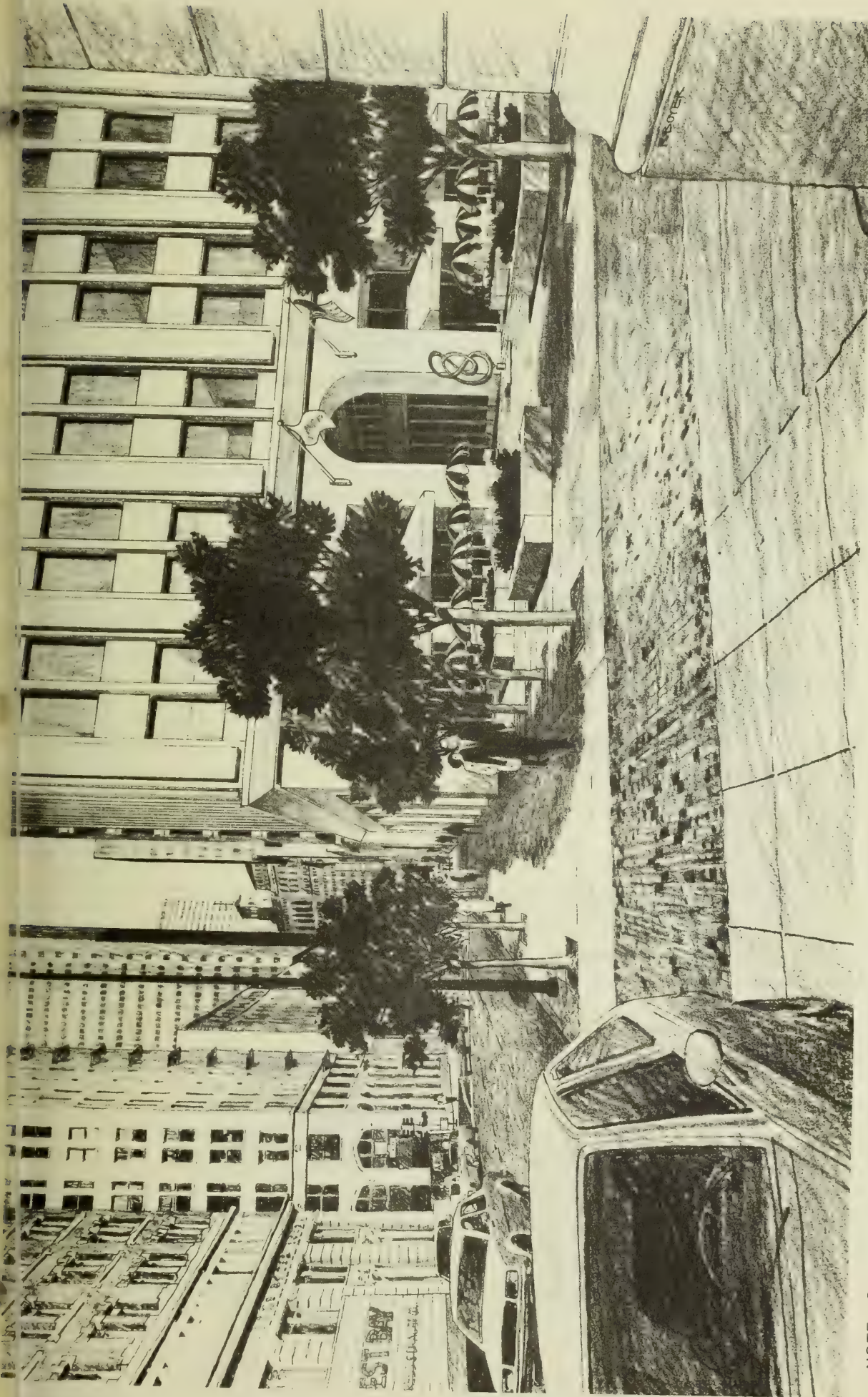
SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

**FIGURE V.H.2.12:
PINE STREET/SANSOME STREET
INTERSECTION, ALTERNATIVE 4, 2000**

SOURCE: Roger Owen Boyer and Associates



NOTE: See Table V.H.2.1 for design requirements, bonuses and options incorporated in case study design.

FIGURE V.H.2.13:
PINE STREET/SANSOME STREET
INTERSECTION, ALTERNATIVE 5, 2000

SOURCE: Roger Owen Boyer and Associates

TABLE V.H.2.1: REQUIREMENTS, BONUSES AND OPTIONS USED IN BUILDING DESIGNS
FOR CASE STUDY SITES, BY ALTERNATIVE

Alternative	Site Location: Sansome and Pine Streets C-3-0 Use District (See Figure IV.H.2.2)	Site Location: Howard Street Mid-500 Block C-3-S Use District (See Figure IV.H.2.3)
1	<ul style="list-style-type: none"> * Floor Area Ratio (FAR): 14:1 no maximum * Height and Bulk Limit: 500-I + Rapid Transit Proximity + Multiple Building Entrances + Sidewalk Widening + Shortened Walking Distance + Plaza + Side Setbacks x Mechanical Penthouse 16' Above Height Limit 	<ul style="list-style-type: none"> * 17:1, no maximum * 320-I + Multiple Building Entrances + Sidewalk Widening + Shortened Walking Distance (a) + Plaza (b)
2	<ul style="list-style-type: none"> * 12:1, maximum 18:1 * 500' (Bulk limits as defined) + Low Coverage at Upper Floors + Transit Proximity + Shortened Walking Distance (c) + Energy Conservation 	<ul style="list-style-type: none"> * 7:1, maximum 10.5:1 * 320' (Bulk limits as defined) + Plaza (b) + Shortened Walking Distance (a) + Energy Conservation
3	<ul style="list-style-type: none"> * 8:1, maximum 14:1 * 260-I + Encouragement of Public Transit Usage + Energy Conservation Beyond that Mandated by Law + Improvement of Pedestrian Environment (d) + Development of New Housing in San Francisco 	<ul style="list-style-type: none"> * 5:1, maximum 8:1 * 130-I + Construct New Housing Within 500' of Site x Mechanical Penthouse 16' Height Limit
4	<ul style="list-style-type: none"> * 7:1, maximum 14:1 * 500' (Bulk limits as defined) + Provide Housing Elsewhere (Not shown) + Energy Conservation Bonus 	<ul style="list-style-type: none"> * 3.5:1, maximum 7:1 * 320 (Bulk limits as defined) + Provide Housing Elsewhere (Not shown) + Energy Conservation Bonus
5	<ul style="list-style-type: none"> * 12:1 maximum varies (see Alternative) * 450-S * Housing (Partially provided on site including Open Space requirement) * First Floor Retail (Not included in FAR) * Open Space and Recreation (1:25) <ul style="list-style-type: none"> + Plaza (see Alternative) + Through-Block Pedestrian Way (see Alternative) * Artworks <ul style="list-style-type: none"> o Street Trees o Cornice Line o Non-structural Decorative Features over Property Line o Flags, Awnings o Facade (Window) Treatment 	<ul style="list-style-type: none"> * 6:1 maximum varies (see Alternative) * 550-S * Housing (Partially provided on site including Open Space requirement) * First Floor Retail (Not included in FAR) * Open Space and Recreation (1:50) <ul style="list-style-type: none"> + Arcade (e)

TABLE V.H.2.1: REQUIREMENTS, BONUSES AND OPTIONS USED IN BUILDING DESIGNS
FOR CASE STUDY SITES, BY ALTERNATIVE (Continued)

NOTES:

- * Denotes a requirement.
 - + Denotes an option for which a floor area bonus is allowed.
 - x Denotes a building feature allowed.
 - o Denotes a building feature encouraged as necessary for consistency with neighboring buildings.
-
- (a) Assumption that developer will provide public access through building lobby to Natoma St.
 - (b) Plaza bonus would not be used.
 - (c) Assumption that developer will provide public access to Sansome St. along south property line.
 - (d) Assumption that developer will provide an arcade and street trees along Pine St.
 - (e) Assumption that developer will provide an arcade along Howard St.

SOURCE: Roger Owen Boyer and Associates

TABLE V.H.2.2: PROVISIONS OF ALTERNATIVES RELATED TO STREETScape AND PEDESTRIAN AMENITY

Urban Design Plan Objectives(a) and Related Streetscape and Pedestrian Amenities	ALTERNATIVES(c)				
	1	2	3	4	5
- Provide Transition between New Large Buildings and Existing Smaller Buildings	N	N	N	N	P
-Discourage Accumulation of Large Properties	N	N	N	N	N
-Provide for Open Space and Landscaped Areas for Pedestrians	P	P	P	P	M
-Promote Large-Scale Landscaped Areas and Open Space	N	N	N	N	P
-Provide Street Trees	N	N	N	N	M
-Provide Landscaping to Screen Residential Areas from Commercial and Industrial Areas	N	N	N	N	N
-Provide Windbreaks, Other Design Measures to Reduce Wind	N	N	N	N	N
-Landscape Parking Areas for Protection of Pedestrian Areas	N	N	N	N	N
-Limit Garage Entrances Along Sidewalks	N	N	N	N	P
-Provide Retail and Commercial Facilities along Street	N	N	N	N	P
-Provide a Sense of Place with Shade, Shelter, Amenities and Conveniences	P	P	P	P	M
-Provide Landscape Furniture, Floorscape, Posts, Canopies, Enclaves, Focal Points, Enclosures	N	N	N	N	P
-Encourage Quality of Detail	N	N	N	N	P
-Provide Alternate Routes of Pedestrian Travel which Create Enclosure and a Variety of Spatial Experience	N	N	N	N	P
-Preserve Continuous Downtown Street Facades	N	N	N	N	P
-Provide Continuity of Existing Cornice and Parapet Lines	N	N	N	N	P
-Provide Richly Detailed Facades	N	N	N	N	P
-Limit Blank Walls at Street Level	N	N	N	N	P
-Limit Blank Walls at Second and Third Floors	N	N	N	N	N
-Provide Pedestrian Scale along Street by use of Arcades, Horizontal Divisions, etc.	P	P	N	N	P
-Provide Arcades for Covered Access to Buildings	P	N	N	N	P
-Require Sunlight in Building Plaza	N	M	N	M	M
-Locate Buildings so as not to Block Distant Views from Street	N	N	N	N	P
-Provide Planting and Paving in Alleys to Create a Commercial Promenade	N	N	N	N	P
-Protect Alleys in Residential Areas as Children Play Areas	N	N	N	N	N
-Provide Mid-Block Pedestrian Shortcuts through Buildings	P	P	N	N	P
-Provide Dignified Signs on Commercial Buildings	N	N	N	N	P
-Protect Unique and Extraordinary Areas and Features of San Francisco	N	N	N	N	P
-Protect Adjacent Parks or Plazas from Building Shadows	N	N	N	N	N
-Design Buildings to Reflect Character of Adjacent Architectural Resources	N	N	N	N	P
-Provide Space for Shoppers, Groups, Vendors, Etc.	P	P	P	P	M

(a) Master Plan Policies are listed in Section III and in The Comprehensive Plan of the City and County of San Francisco, The Urban Design Plan, August 26, 1971, adopted by Resolution No. 6745 of the City Planning Commission.

(b) Streetscape and Pedestrian Amenities are summarized and abstracted from Townscape, by Gordon Cullen, 1961, and from Design of Cities, by Edmund N. Bacon, 1967.

(c) M - Amenity is mandatory

P - Provides guidelines and encourages amenities

N - No provision for this amenity

SOURCE: Roger Owen Boyer and Associates

V. Environmental Impacts

3. WIND, SUN AND SHADOW

A quantitative analysis of wind and sunlight effects resulting from the adoption of any of the five Alternatives is complicated by the site-specific nature of wind and sunlight changes. Each Alternative would result in a discrete number of new buildings whose exact locations and designs cannot be predicted with certainty. As the wind and sunlight impacts of each building would depend on variables such as building orientation, shape, bulk, profile and other design features, a qualitative analytical approach is taken here.

Simple building characteristics have been identified that are related to the severity or extent of typical wind or sunlight impacts. The relative tendency of each Alternative to encourage future construction of buildings with these characteristics is then examined.

Wind

Past wind-tunnel tests of scale models of proposed buildings provide a data base from which to develop relationships between wind effects and building characteristics. Between 1974 and 1982, 52 proposed buildings of varying size, height, and shape were tested using the same methodology to predict the extent and severity of wind accelerations at ground level. The analysis of these data is described in Appendix M.

The variation in ground level wind impacts for the buildings tested was found to be related to three factors:

- exposure of the building to the prevailing wind direction,
- the extent and uniformity of the windward facade, and,
- the location of the site on the block.

The exposure of a building is simply the amount of the building that extends above upwind buildings. The more exposed a building is, the greater the volume and momentum of the wind intercepted, and the greater the potential for wind accelerations at street level.

The shape, area and uniformity of the upwind (in San Francisco, westward) facade is another factor that determines pressure forces and wind accelerations near a building.

V. Environmental Impacts

All else being equal, the greater the area of the facade, the greater the typical wind accelerations at street level. Relatively large, uniform facades typically result in greater wind accelerations than do narrow or complex facades with numerous setbacks.

The location of a building within its block has little effect on the magnitude of wind accelerations, but does determine where accelerations occur. Because a highrise structure causes wind accelerations along its upwind facade and near its upwind corners, a building on the upwind side of the block has the greatest potential for causing wind accelerations in pedestrian areas. Conversely, a building located on the downwind side of a block has the least potential for pedestrian impacts because wind accelerations occur within the block and over the rooftops of surrounding buildings.

None of the Alternatives examined in this report would control the location of buildings within their blocks. The other factors described above (exposure and extent and uniformity of the windward facade) would, however, vary with Alternative, offering a means of predicting the relative wind impacts of each. Exposure is directly related to building height and the difference in height between new construction and existing structures. The extent of facade is proportional to height and bulk and is affected by any requirements for setbacks and embellishments.

1990

Impacts of individual buildings built before 1990 would be similar to those for buildings undergoing environmental review and wind tunnel testing in the period 1974-1982. The majority of these buildings were predicted to cause local wind increases at ground level (see Appendix M). None of the buildings tested, however, was predicted to cause wind accelerations of the magnitude associated with notably windy buildings in San Francisco such as Fox Plaza and the Federal Building.

The overall effect of development between 1984 and 1990 would be an increase in pedestrian areas affected by building-generated wind accelerations. About 60 percent of the space proposed to be constructed in the C-3 District in this period would occur in the Central Office District (Subarea 1), but the density and height of existing buildings would tend to reduce the exposure of new buildings to winds from the west.

V. Environmental Impacts

While growth in other subareas would be less, the lower general level of existing development maximizes the exposure of new buildings to the prevailing winds. The severity of wind impacts from individual new buildings is therefore potentially higher than in Subarea 1, although a lesser area would be affected.

2000

The wind effects of construction between 1990 and 2000 cannot be quantified due to the site-specificity of wind increases or decreases. The relative tendency of each Alternative to result in building designs that are associated with adverse wind impacts can be evaluated, however. The exposure of future buildings to west winds would be related to building heights associated with each Alternative. The tendency for new construction to have uniform or complex facades under each Alternative is indicated by its bulk regulations and bonuses.

Height regulations and building shape have also been evaluated to rank each Alternative as to its potential for creating windy ground-level conditions. Building height and bulk limits (see Figures III.1 to III.7) and building prototypes developed for this report (see Appendix D) were used to differentiate the effects of the Alternatives. The relative impact of each Alternative is described below.

Alternative 1 clearly would have greatest potential impact on winds. This Alternative would result in the greatest building heights, and the relationship of height limits, maximum floor area ratios (FAR), and bonuses would result in relatively uniform building faces. The impacts of individual buildings would be similar to those found for buildings undergoing environmental review and wind tunnel testing in the period 1974-1982, with the majority of buildings causing local wind increases at ground level. This Alternative would not require that any plazas constructed meet minimum wind standards.

Alternative 2 would have wind impacts similar to those of Alternative 1, except in Subarea 1, where maximum building heights would be reduced. Alternative 2 would rank second in potential for adverse wind impacts. The requirements for side setbacks and bonuses for low coverage at upper floors would tend to result in more tapered buildings

V. Environmental Impacts

than Alternative 1, thereby reducing the potential for adverse wind effects. Alternative 2 would also provide that plazas be subjected to minimum wind standards in determining the allowable plaza bonus.

The minimum standards for plazas (winds could not exceed 50 mph more than 0.01 % of the time or 35 mph more than 0.1 % of the time) would do little to reduce wind effects, since winds of 35 to 50 mph represent hazardous conditions. A standard that would avoid such winds might not avoid uncomfortable conditions that would affect plaza usability.

Alternative 3 building heights would be the lowest of all Alternatives. Bulk regulations and FAR restrictions would result in relatively squat buildings. Alternative 3 would rank fourth in terms of potential for creating adverse wind conditions.

Alternative 3 would provide unspecified bonuses for "improvement of pedestrian environment," to be determined by the Planning Commission. Wind standards are not identified, although the Planning Commission could consider wind conditions in determining the allowable bonus for a plaza.

Alternative 4 would result in building heights similar to those for Alternative 2, except in the Tenderloin District (Subarea 5) where building heights would be lower. The application of bulk limits to ground level would result in more slender buildings compared to Alternative 2. This Alternative would rank third in its potential for creating adverse wind impacts. Plaza bonuses and wind standards for Alternative 4 would be similar to those for Alternative 2.

Alternative 5 bulk restrictions would result in tapered buildings with multiple setbacks. Such complex designs would tend to reduce ground-level wind impacts. This Alternative would have the least potential for adverse wind impacts. The open space requirements of Alternative 5 require varying levels of wind protection for each type of open space.

Sun and Shadow

The sun/shade impacts of a given structure are simpler to analyze than wind impacts, as the reduction of direct sunlight is totally determined by geometry. Nevertheless, impacts

V. Environmental Impacts

are site-specific and based on variables such as height, shape, bulk and orientation. Location on the block is important in assessing sun/shade impacts, as are nearby structures and the proximity of sun-sensitive activities and facilities such as plazas and parks. The orientation and width of streets is also a relevant factor.

The simplest factors that can be related to sunlight impact and that allow differentiation among Alternatives are building height and bulk. The amount of sky blocked from view by a building, and the reduction in sunlight duration, is directly proportional to each of these factors.

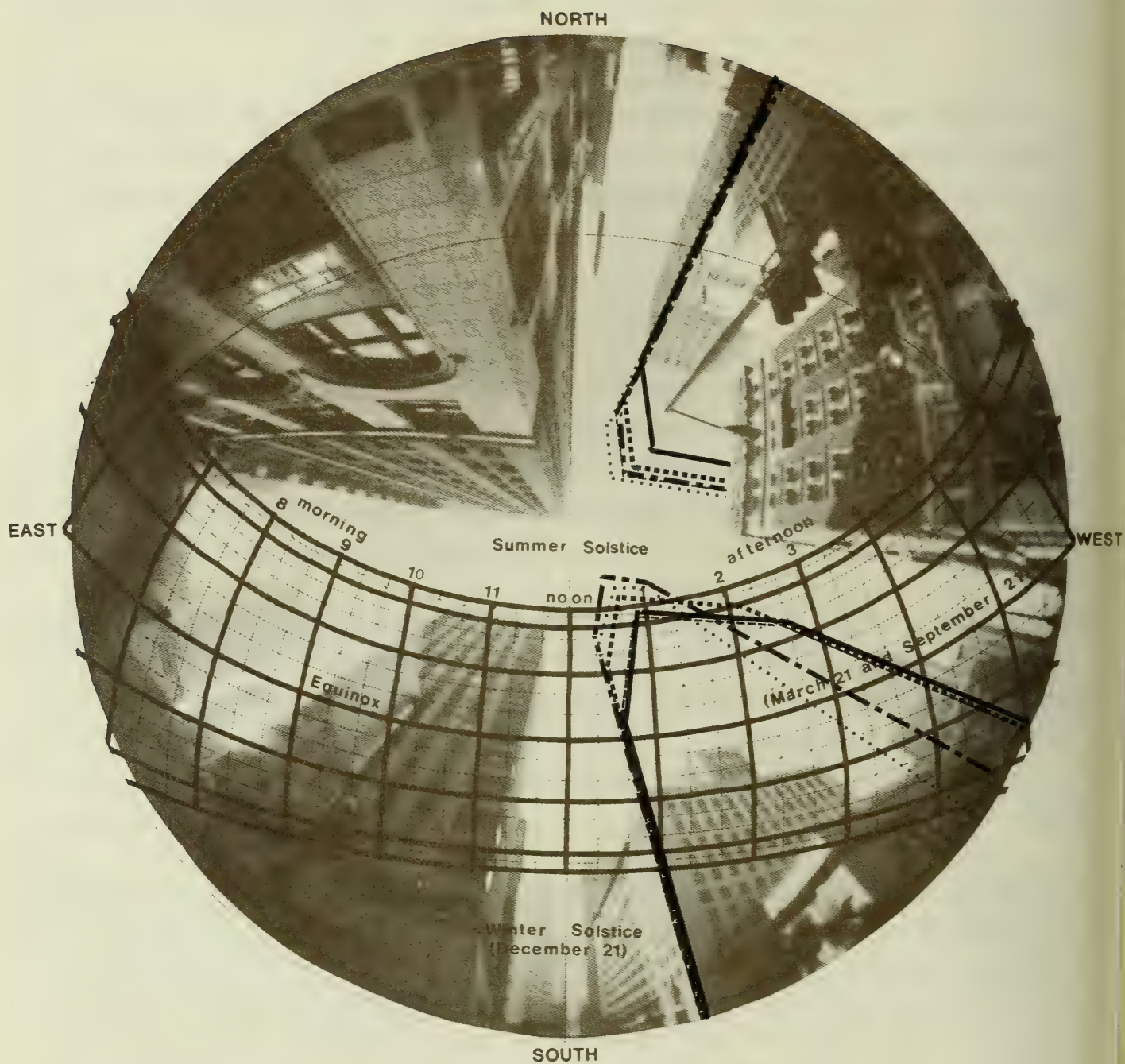
1990

Sunlight extent and duration at pedestrian levels would continue to be reduced by development proposed to be completed by 1990. Changes in Subarea 1 would be subtle, because sunlight is already restricted by existing buildings. The localized impacts of individual buildings in other subareas could be relatively greater because of generally lower existing building heights.

Of the locations selected for detailed analysis (see Figure V.H.2.1), only the location at Ecker and Stevenson Streets would be affected by construction between 1984 and 1990. Sunlight duration would be reduced by 1-1/2 to 2 hours daily in the fall and winter months at this location. A second proposed highrise in the area would have no additional effect.

2000

Construction between 1990 and 2000 would reduce sunlight reaching the ground throughout the study area, but the extent and severity would vary by location and by Alternative. Figure V.H.3.1 shows building prototypes of the Alternatives superimposed on a fisheye photograph taken at the northeast corner of the Pine Street / Sansome Street intersection. The impact of each Alternative at this location is generally indicative of impacts in Subarea 1 north of Market Street. All Alternatives would reduce sunlight at the intersection in the early afternoon. The impacts of the Alternatives resulting in taller buildings (Alternatives 1 and 5) is not greater but is actually less than the wider but shorter buildings under the other Alternatives. It should be noted that beyond a certain height, additional floors would not change the sunlight patterns as they are visually above



-  1990
-  ALTERNATIVE 1
-  ALTERNATIVE 2
-  ALTERNATIVE 3
-  ALTERNATIVE 4
-  ALTERNATIVE 5

FIGURE V.H.3.1:
SUN PATH ANALYSIS, PINE STREET /
SANSOME STREET INTERSECTION,
ALTERNATIVES 1-5, 2000

SOURCE: Donald Ballanti

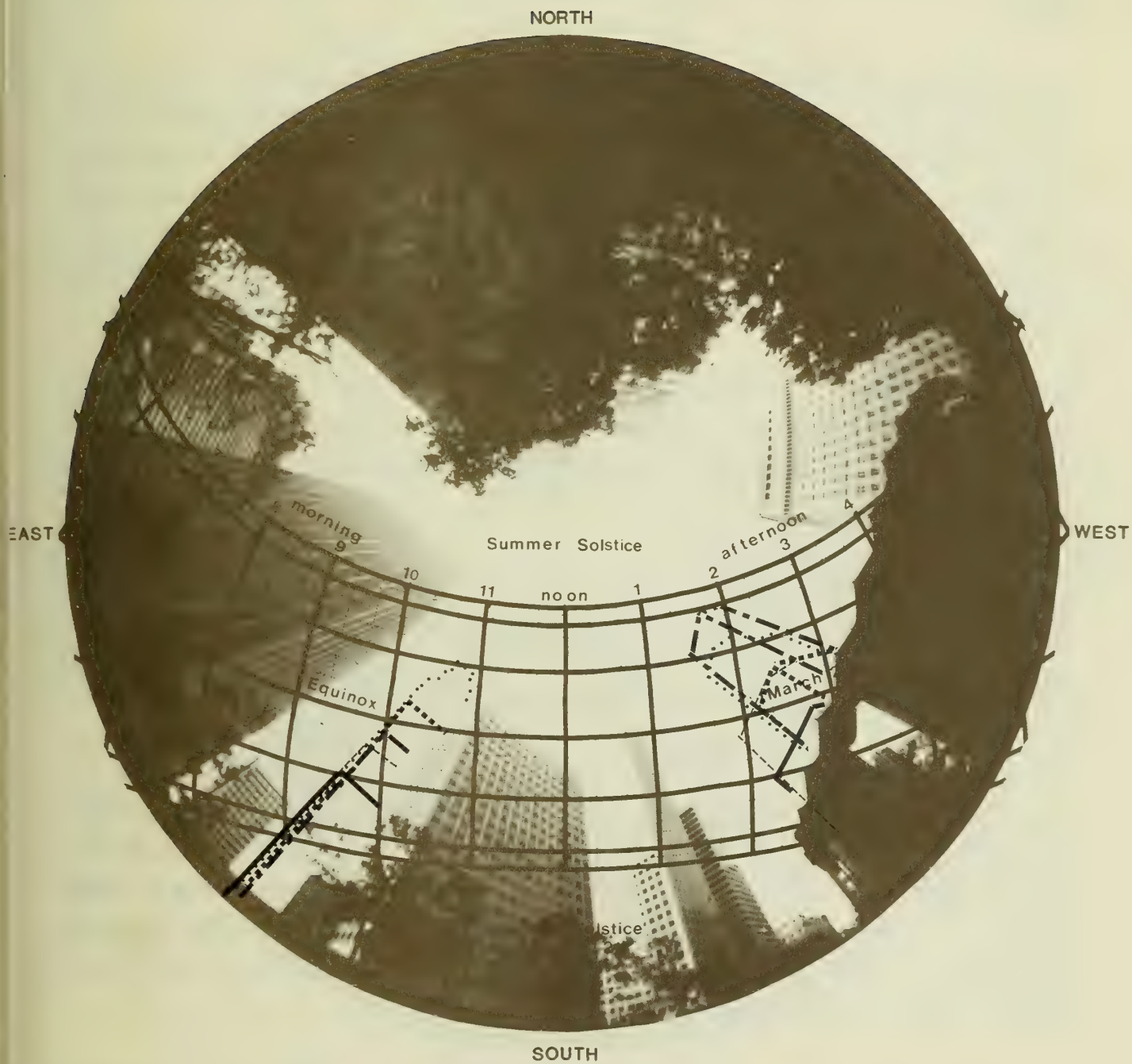


FIGURE V.H.3.2:
SUN PATH ANALYSIS,
CROWN ZELLERBACH PLAZA,
ALTERNATIVES 1-5, 2000
 SOURCE: Donald Ballanti

V. Environmental Impacts

the maximum elevation of the sun in the sky. Within the relatively narrow street canyons north of Market Street, sunlight impacts are related more to building bulk than building height.

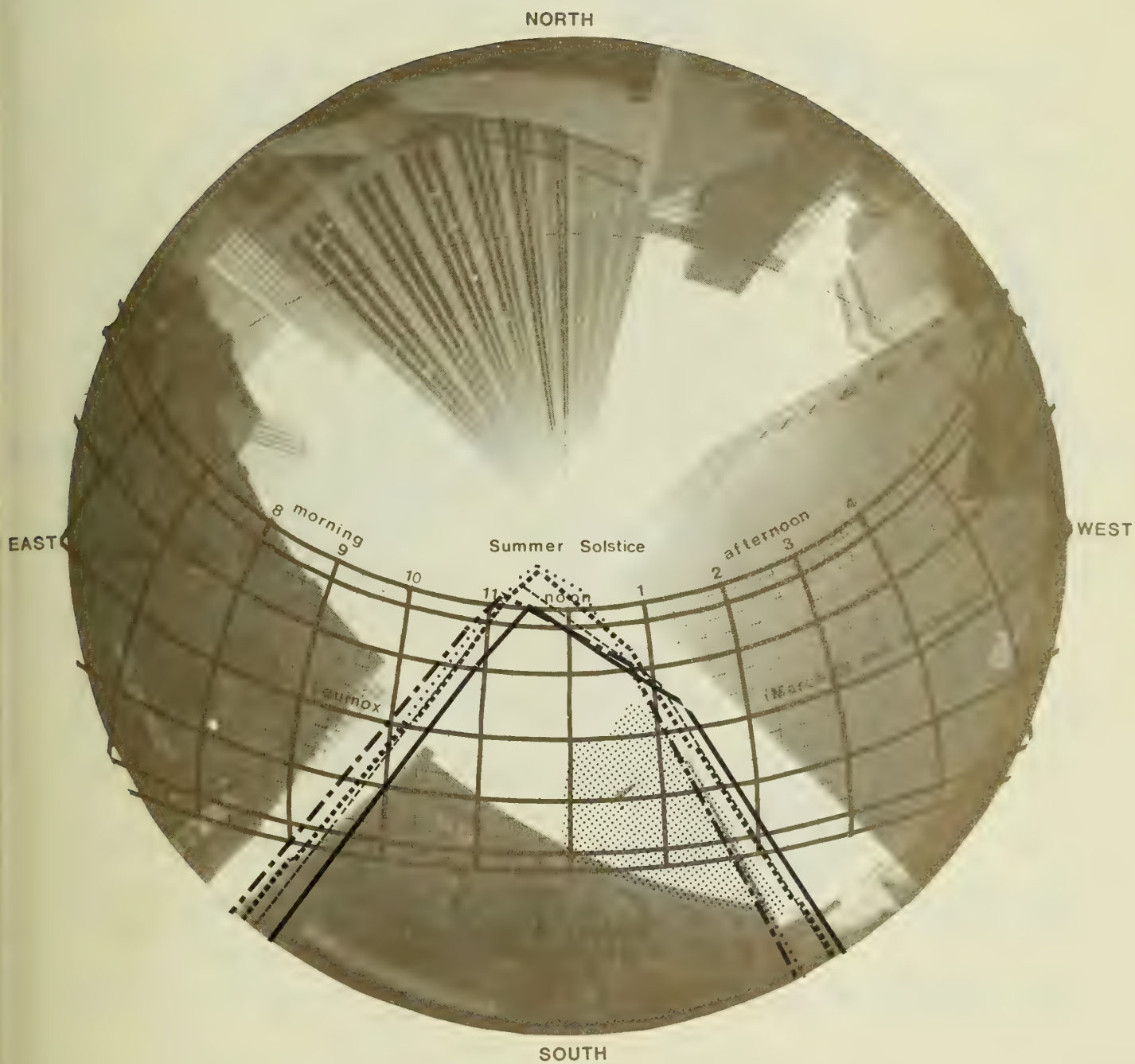
The photograph in Figure V.H.3.2 is taken at the Crown Zellerbach Plaza. This site is representative of conditions along Market Street within the Central Office District. Two prototype buildings are shown for each Alternative, reducing morning and mid-afternoon sunlight. The reduction for Alternatives 3, 4 and 1 would be limited to less than an hour in late fall and early winter. The taller buildings probable under Alternatives 2 and 5 would reduce sunlight duration by a similar amount each day, but over a longer period of the year.

In the afternoon, prototype buildings under Alternatives 2, 3 and 4 would add a fraction of an hour of additional shade around the time of the equinoxes. The taller buildings associated with Alternatives 1 and 5 would reduce afternoon sun by about one hour during spring and summer.

Figure V.H.3.3 shows the sunlight impacts of the five Alternatives at the east end of the Tishman Plaza. Although the heights of prototype buildings vary, the impacts of the Alternatives are very similar. Most of the midday sunlight would be blocked by all Alternatives in all seasons. This site is representative of narrow alleys and streets in all subareas, and indicates the difficulty in maintaining sunlight in very narrow streets.

Figure V.H.3.4 shows two prototype buildings south of Howard Street. This site would be representative of portions of the C-3 District that have relatively wide streets and have been developed at relatively low densities. Sunlight reduction would occur near at midday for about two to three hours for all Alternatives. The time of year in which this would occur would be different for each Alternative, ranging from six months for Alternative 5 to three months for Alternative 3.

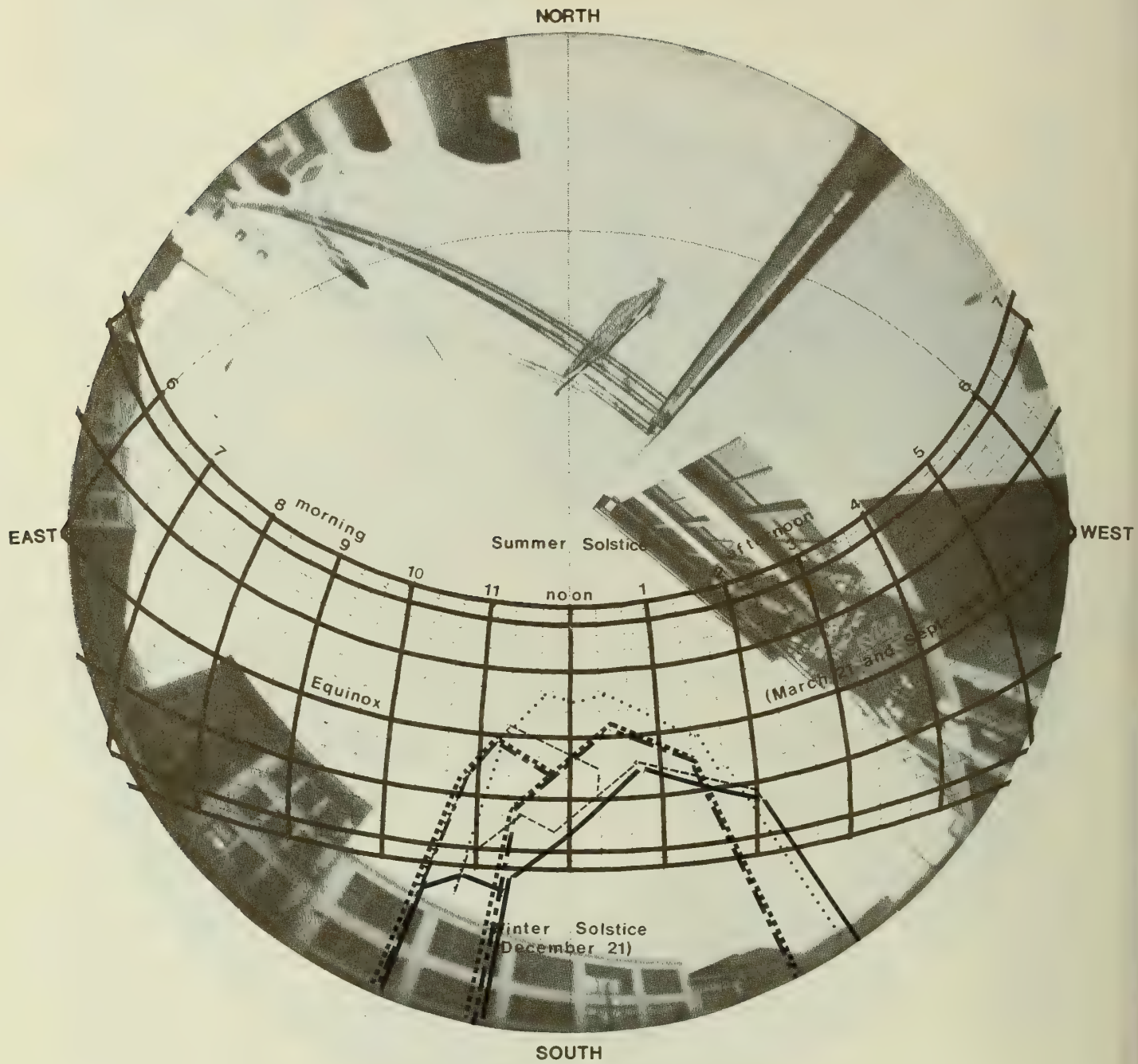
Of the five Alternatives, Alternatives 2 and 4 require that sunlight access to plazas be considered in the calculation of bonuses for the plaza. The sunlight requirement (plaza must be in 75 percent sunlight from 11 a.m. to 2 p.m. from May 1 to October 30) is vague relative to calculation of the percentage of sunlight, however. Problems may also arise



- 1990
- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3
- ALTERNATIVE 4
- ALTERNATIVE 5

FIGURE V.H.3.3:
SUN PATH ANALYSIS,
525 MARKET STREET PLAZA,
ALTERNATIVES 1-5, 2000

SOURCE: Donald Ballanti



-  1990
-  ALTERNATIVE 1
-  ALTERNATIVE 2
-  ALTERNATIVE 3
-  ALTERNATIVE 4
-  ALTERNATIVE 5

FIGURE V.H.3.4:
SUN PATH ANALYSIS,
522/528 HOWARD STREET,
ALTERNATIVES 1-5, 2000
 SOURCE: Donald Ballanti

V. Environmental Impacts

because the time period is not symmetrical about solar noon./1/ Height limits for areas adjacent to the plaza to meet the requirements would also not be symmetrical, but would slope down towards the east./2/

Alternative 5 also requires that sunlight access standards be met in specified outdoor spaces. In addition, it specifies maximum street wall heights and elevation angles along 13 streets in the study area to protect midday sunlight. This is essentially an additional and more stringent setback and height restriction than the basic height/bulk regulations of the Alternative. These controls would provide an effective means of preserving midday sunlight along the specified streets.

Pedestrian Comfort

When the combined effects of wind and sunlight on pedestrian comfort are considered, it is apparent that future construction would reduce pedestrian comfort. The extent and severity of this reduction would vary by Alternative. In general, Alternative 5 may be expected to have the least effect on pedestrian level winds, and its requirements for sunlight protection in outdoor spaces and specified streets would result in its having generally the least effect on sunlight.

Alternative 1 would probably have the greatest impact on pedestrian comfort as it would have the greatest adverse impact on both wind and sunlight at pedestrian levels. Alternatives 2, 3 and 4 would have impacts intermediate to those of Alternatives 1 and 5.

NOTES - Wind, Sun and Shadow

/1/ Solar noon is when the sun is due south. During most of the period May 1 to October 30, Pacific Daylight Savings Time is in effect, so solar noon occurs at about 1 p.m. rather than at about noon as it does during the rest of the year.

/2/ Knowles, Ralph L. Sun Rhythm Form (Cambridge, Mass.: The MIT Press; 1981), p. 63.

4. SKYLINE IMAGE

Introduction

The San Francisco Urban Design Plan recognizes that "views contribute immeasurably to the quality of the city and to the lives of its residents."/1/

Several distinct visual impacts may be identified from an examination of views of the Downtown under each of the five Alternatives:

- Groups of office towers with flat tops and approximately the same heights produce a "benching" effect that reduces or eliminates the variety and interest of the sky/building interface and of the visual profile of individual buildings.
- Similarly, concentrations of buildings with square tops and relatively large bulks at upper levels tend to produce a monotonous skyline. Such groups of buildings tend to block sightlines through the groups of buildings resulting in foreshortened depths of views, reduced variety of elements in the views, diminished distinctiveness of individual buildings in the views, and, in general, reduced visual variety, richness and interest in the skyline scene.
- Increased concentrations of highrise structures tend to reduce the availability of views from the individual buildings within such concentrations.
- Encroachment of large-scale structures toward the waterfront and hills, particularly Nob Hill, disturbs the pattern of "low, fine-scaled" buildings in these areas that is endorsed by the Urban Design Plan./2/
- Construction of highrise buildings along portions of Market Street diminishes the distinction between the two existing concentrations of large-scale structures in the C-3 District, one in the Downtown Office District, the other around Market and Polk Streets in the vicinity of the Civic Center./3/

- The construction of large buildings with hard or reflective curtain wall treatments impairs the "visual unity and special character of the city."/4/ Other facade treatments may also disturb existing visual patterns and sense of scale./5/

Figures V.H.4.1 through V.H.4.6 show projected skyline configurations as seen from Potrero Hill in 1990 and for each of the five Alternatives in the year 2000. The methodology for the development of these figures is described in Appendix N; the base photograph for these figures is shown in Figure IV.H.4.1. Figure V.H.4.7 provides a key to the names of selected existing buildings, as well as those under construction and proposed.

1990

Buildings approved for construction, presently under review, or proposed in the C-3 District; and which meet projected demand for new office space through 1990, are shown in Figure V.H.4.1. Although the maximum height limits would not increase, a number of new buildings would approach those limits, would block sightlines between buildings, and would tend to further contribute to a flat, plateau-like skyline. Figure V.H.4.1 also shows that relatively large-scaled buildings, currently concentrated in the Financial District, would begin to be built on its fringes along Kearny Street, toward the waterfront, and in the Tenderloin.

2000

Alternative 1

A configuration of the C-3 District skyline in the year 2000 under Alternative 1 is shown in Figure V.H.4.2. This is the Alternative for which the most intense downtown development is forecast. Floor area ratio (FAR) regulations would generally limit buildings to about 600 feet in height in the central Financial District, although some could approach the height limit of 700 feet. Rectilinear office buildings, similar in height to the most recent generation of highrise office buildings, but shorter than the Bank of America Headquarters, would fill many of the spaces in the 1982 skyline and would block views to and from many of the buildings visible in 1982. The downtown office core would expand toward the Bay Bridge and Nob Hill, filling in the low-density area apparent in the 1982 skyline which signals the eastern edge of the Union Square Retail District at Kearny Street. A few relatively large buildings would also be built along Market Street towards the Civic Center.



Refer to Figure 4.1 for a reference key to selected existing buildings and buildings to be completed by 1990.



FIGURE V.H.4.1:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, 1990
 SOURCE: Roger Owen Boyer and Associates



FIGURE V.H.4.2:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, ALTERNATIVE 1, 2000
 SOURCE: Roger Owen Boyer and Associates



Figure 4.6: A reference key to selected existing buildings and buildings to be completed by 1990



FIGURE V.H.4.3:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, ALTERNATIVE 2, 2000
 SOURCE: Roger Owen Boyer and Associates



FIGURE V.H.4.4:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, ALTERNATIVE 3, 2000
 SOURCE: Roger Owen Boyer and Associates



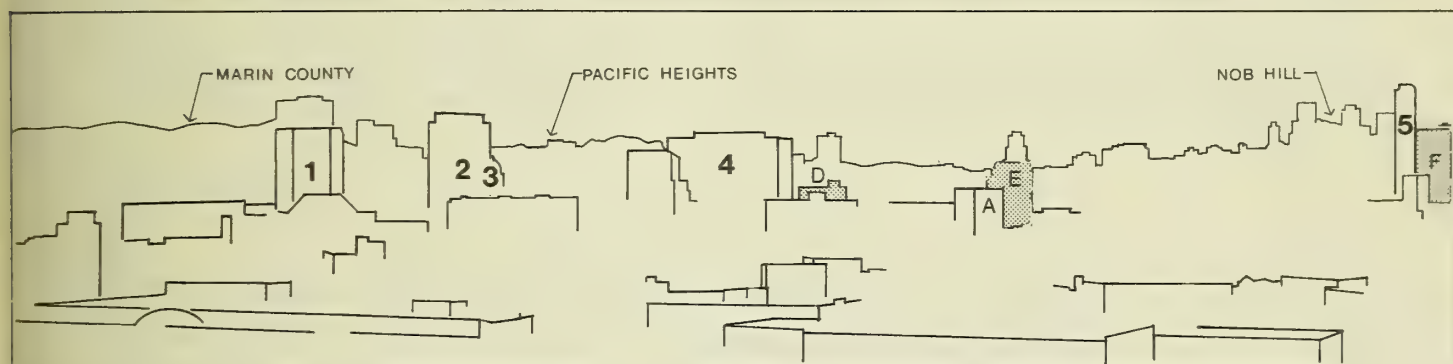
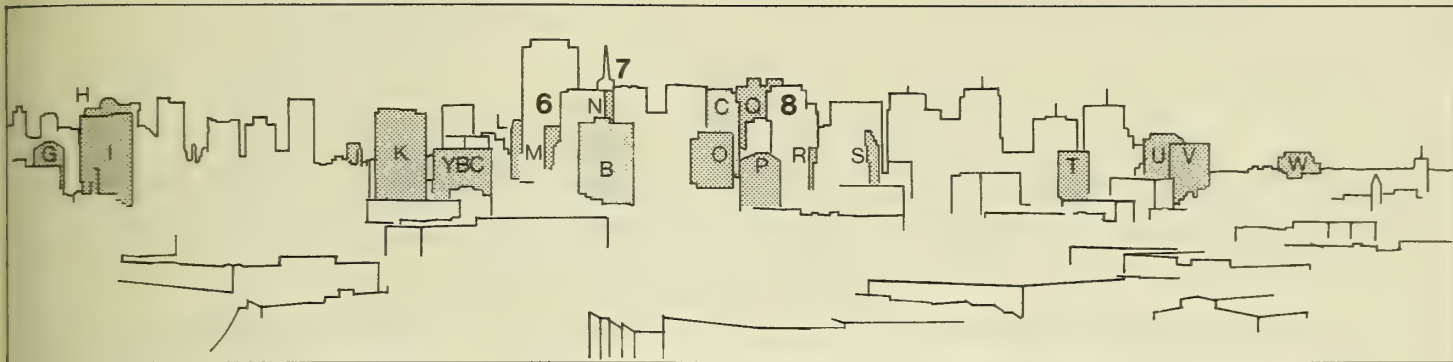
Refer to Figure V-4.1 for a reference key to selected existing buildings and buildings to be completed by 1990



FIGURE V.H.4.5:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, ALTERNATIVE 4, 2000
 SOURCE: Roger Owen Boyer and Associates



FIGURE V.H.4.6:
C-3 DISTRICT SKYLINE AS SEEN FROM
POTRERO HILL, ALTERNATIVE 5, 2000
 SOURCE: Roger Owen Boyer and Associates



NOTE: See skyline photos, Figures V.H.4.1 through V.H.4.6

EXISTING STRUCTURES APPEARING IN 1982 SKYLINE

1. Bank of America Data Center
2. Fox Plaza
3. City Hall
4. Federal Building
5. Hilton Hotel
6. Bank of America Headquarters
7. Transamerica Pyramid
8. Standard Oil Building

F. Hilton Hotel Tower #2

G. Olympic Club Hotel

H. Holiday Inn

I. Hotel Ramada

J. 750 California Street

K. Pacific Apparel Mart

L. 580 California Street

M. 154 Sutter/Kearny

N. 333 Bush Street

O. 90 New Montgomery Street

P. New Montgomery Place

Q. 333 California Street

R. 71 Stevenson Street

S. One Anthony Place

T. 301 Mission/Beale

U. 135 Main Street

V. 315 Howard Street

W. 201 Spear Street

YBC Yerba Buena Center

BUILDINGS UNDER CONSTRUCTION - 1984 SKYLINE

- A. 1155 Market Street
- B. Meridian Hotel
- C. One Sansome Street

BUILDINGS APPROVED AND IN REVIEW IN 1982 (1990 SETTING)

- D. Holiday Inn Expansion
- E. 1151 Market Street

FIGURE V.H.4.7:

KEY TO BUILDING IN SKYLINE, 1990

SOURCE: Roger Owen Boyer and Associates

Alternative 2

Figure V.H.4.3 shows the skyline of the C-3 Use District as it could appear in 2000 under Alternative 2. It shows highrise office construction at heights up to 575 feet in an area centered on the Financial District and including lower Market Street and the Kearny Street corridor. This development would be somewhat less intense than the development projected under Alternative 1. New buildings would be visually characterized by the setbacks at upper levels required under this Alternative. Additional large developments are projected to be built along Market Street towards the Civic Center. Midrise residential construction is shown on sites where such construction would be likely to occur, primarily south of Market Street, between Fourth and Twelfth Streets.

Alternative 3

The regulations and incentives embodied in Alternative 3 would produce a skyline similar to that shown in Figure V.H.4.4. The heights of new office buildings would be perceptibly lower than the prevailing heights of the most recent buildings, with a maximum height of 260 feet. In bulk and shape, however, they would be similar to many recent buildings with rectilinear volumes and square tops. New construction would occur at the edges of the Financial District in the South of Market area, at the foot of Market Street and in the Kearny Street/Union Square area. This Alternative would also result in new office construction along Market Street and in the Civic Center area.

Alternative 4

Figure V.H.4.5 shows the skyline as it could appear under Alternative 4. This Alternative would require residential construction or rehabilitation in connection with downtown office construction and would encourage the construction of housing in the C-3 Use District. Midrise residential construction is shown on sites where such construction would be likely to occur, primarily south of Market Street, between 4th and 12th Streets. Under this Alternative, the heights of new buildings would be somewhat lower than the prevailing heights of 1982 highrise office buildings. The maximum height permitted under this Alternative would be 575 feet. As with previous Alternatives, some expansion of

the Financial District office core towards the Bay Bridge and into the Kearny Street corridor would occur. Several buildings larger and taller than the prevailing size would be likely to be constructed in the vicinity of Market and Van Ness Streets and others would be built along Market Street, including office, residential and mixed-use buildings.

Alternative 5

Figure V.H.4.6 shows a configuration of buildings that could occur under Alternative 5. Some sightlines between buildings would be filled and several older buildings obscured, but to a lesser extent than in the other four Alternatives. Alternative 5 would provide more variety in the heights of buildings, because of more extensive use of TDRs, and more variety in the treatments of building tops, because of bulk controls which would encourage setbacks at upper levels and provide bonuses for more varied roof shapes. Because of the combination of height, bulk and TDR provisions in this Alternative, it would result in several new buildings of relatively bulky scale to the east and west of the present office core, and some new midrise structures south of Market Street.

Other Views

Because under all Alternatives the most intense new development between 1982 and 2000 would occur on the southern and western edges of the Financial District, views from viewpoints other than Potrero Hill would generally reveal fewer changes in the skyline than those views shown in Figures V.H.4.2 through V.H.4.6.

Treasure Island

Under all five Alternatives, the most conspicuous new buildings would be built south of Market Street. Alternative 1 would result in new highrise buildings of up to 700 feet in height occupying sightlines between existing buildings from Market Street to Folsom Street. Alternative 2 would result in somewhat fewer but similar buildings. The shorter structures that would be built under Alternative 3 would generally not be visible behind existing buildings, although they would occasionally appear in spaces between existing buildings. Both Alternatives 4 and 5 would result in relatively little development near the waterfront.

V. Environmental Impacts

Under Alternatives 1 and 2, some bulky buildings would be built at the north edge of the Financial District in the vicinity of the Transamerica Building. These buildings would fill spaces between existing buildings and perhaps partially block views of Nob Hill. Under Alternatives 3 and 5 these buildings would be shorter. Under Alternative 4, little new development would be visible at this edge of the C-3 District.

Golden Gate Bridge/Vista Point

From this viewpoint the Civic Center area is blocked by intervening hills, and most of the new Central Office District buildings are blocked by existing development, including the Embarcadero Center. Views of new buildings near Chinatown at the northwest edge of the Central Office District are blocked by Russian Hill.

Under Alternative 1, several new buildings at heights of up to 600 feet, and perhaps one or two around 700 feet would be visible in the area between the Bank of America Headquarters and the Transamerica Building. Several buildings 300 to 400 feet tall between the Central Office District and the Civic Center would be visible across the low area between Nob Hill and Pacific Heights, blocking some of the Bay view. Alternatives 2 and 4 would have similar but somewhat less intense effects. Little change from the 1990 condition would be apparent under Alternative 5 except for a few tall buildings, some approaching 700 feet tall, with stepped tops in the distance beyond the Bank of America Building. New buildings built under Alternative 3 would not be visible from this viewpoint because of their low heights.

Twin Peaks

Visual changes in the western portion of the C-3 District, in the vicinity of Market Street and Van Ness Avenue, would be most apparent in skyline views from Twin Peaks. Alternative 4 would cause the greatest visual changes in this portion of the study area because housing required under this Alternative would concentrate here at heights of 80 to 240 feet. Alternatives 1 and 2 would result in several new office buildings at heights up to 240 feet in this portion of the study area. Under Alternative 3, several shorter buildings would be built in the area. None would be built under Alternative 5.

V. Environmental Impacts

New buildings in the Downtown Office District would be visible under Alternatives 1, 2, 4 and 5. Alternatives 1 and 5 could result in one or two buildings around 700 feet in height, which would be prominent skyline features. In Alternative 1 such towers would be most likely to be along Market Street; under Alternative 5 they would be most likely to be south of Market Street.

NOTES - Skyline Image

- /1/ Urban Design Plan, San Francisco Department of City Planning, 1971, p. 32; hereinafter Urban Design Plan.
- /2/ Urban Design Plan, Fundamental Principle for Major New Development Number One, p. 32.
- /3/ Urban Design Plan, Fundamental Principle for Major New Development Numbers Three and Four, p. 33.
- /4/ Urban Design Plan, Fundamental Principle for Major New Development Number Six, p. 33.
- /5/ This impact has not been assessed individually for the five Alternatives, but would probably occur in approximate proportion to total construction except under Alternative 5 which provides that during project review "incongruous materials, proportions and sense of mass and complexity" should be discouraged./6/
- /6/ Guiding Downtown Development, San Francisco Department of City Planning, July 1982, Downtown Urban Design Policy Number Five, p. A-19.

VI. MITIGATION MEASURES

A. INTRODUCTION TO GROWTH RATE LIMITS

The preceding Environmental Impact section (Section V) presents the differences among the Alternatives regardless of any regulatory ceilings on the rate of new development. The San Franciscans for Reasonable Growth (SFRG) initiatives (Alternative 4 in this report) had originally proposed a 1.0 million sq. ft. per year limit on the amount of new office construction allowed citywide. This regulation was not incorporated in the preceding analysis and comparison of the Alternatives. Instead, a range of annual citywide growth limits is considered in the mitigation section as they might apply under all Alternatives. The three ceilings discussed in this section are:

- 0.5 million sq. ft. per year (msf/yr.)
- 1.0 msf/yr.
- 1.5 msf/yr.

In all Alternatives, these annual limits are assumed to apply to citywide office development. The following discussion describes the general effects of these limits and how they might be implemented. Conclusions regarding more specific effects on employment, housing, transportation, urban design and architectural resources, etc. are discussed in subsequent sections from the perspective of whether they would provide mitigation for each type of impact. Each of these sections also considers other mitigation measures besides growth rate limits.

POTENTIAL EFFECTS ON NEW DEVELOPMENT

Office Development

There are two issues involved in considering the effects of annual limits on office development. One is the amount of development that would be allowed and the difference between the limit and the amount of construction that would have occurred in the absence of a growth limit. The second issue concerns the criteria to be used to allocate the permits and whether these criteria would affect the type or location of new development (in addition to the effect on the amount of construction).

Table VI.1 illustrates the likely effects of various annual limits on the amount of new office construction. While other scenarios are possible, this example illustrates the potential impacts of the different limits and highlights the differences among Alternatives.

TABLE VI.1: EFFECT OF ANNUAL LIMITS ON CITYWIDE OFFICE CONSTRUCTION, 1984-1990, 1990-2000 BY ALTERNATIVE

<u>Annual Limit</u>	<u>1984-1990</u> %	<u>Percent That Would Not Be Built</u>				
		1990-2000 By Alternative				
		1	2	3	4	5
		%	%	%	%	%
1.5 million sq. ft.	20-30	30-40	30-40	20-30	-	-
1.0 million sq. ft.	45-55	50-60	50-60	45-55	-	20-30
0.5 million sq. ft.	70-80	70-80	70-80	70-80	40-50	60-70

NOTE: The citywide estimates in this table are based on assumptions about the percent of total citywide office development represented by forecast C-3 District office development. The assumptions varied by time period and Alternative, as follows: 1984-1990 - 80%; 1990-2000 - 75% (Alternative 1); 70% (Alternative 2); 65% (Alternative 3); 85% (Alternative 4); and 55% (Alternative 5).

SOURCE: Recht Hausrath & Associates

VI. Mitigation Measures

Since the annual limits on office development would apply citywide, the percentages in the table refer to total office development throughout the City. The later discussion of criteria for allocating permits considers whether the C-3 District might be affected similarly to other areas of the City, in which case the citywide percentages would apply to the C-3 District.

For the 1990 to 2000 period, the table shows the following:

- A limit of 1.5 million sq. ft. per year could result in about 25-40 percent less office development under Alternatives 1, 2, and 3. It is unlikely to have much effect under Alternatives 4 and 5.
- A limit of 1.0 million sq. ft. per year could limit office development in the City by 45-60 percent under Alternatives 1, 2 and 3 and by about 25 percent under Alternative 5. It is unlikely to have much effect under Alternative 4.
- A limit of 0.5 million sq. ft. per year could have a major effect on City office development. The large majority of new development (70-80 percent) under Alternatives 1, 2 and 3 would not be allowed. Office development would be limited by about 60-70 percent under Alternative 5 and by 40-50 percent under Alternative 4.

If the limits were enacted in the near future and were applied to pipeline projects projected to be developed during the 1984 to 1990 period, fewer projects would be built. The effect could range from 25 to 75 percent less development depending on the annual limit adopted (see the figures in the table). The effect would be less than shown here if the limits were enacted sometime after 1984.

The criteria for allocating permits under a system of annual limits would determine how office development in the C-3 District would be affected relative to development elsewhere in the City. Generally, the citywide percentages in the table could apply directly to the amount of C-3

District office development or the C-3 District could be more or less affected depending on the type of criteria used. Three types of criteria are discussed below.

- Random Selection: If permits were allocated through a lottery, first-come-first-served, or other random type of system, the magnitude of the difference between the annual limit and the amount of development which would otherwise occur becomes an important consideration.
 - In situations where the limits are most constraining (0.5 million sq. ft. for example), a reduced supply of development would result in higher rents for space. Higher rents (induced by a shortage of supply relative to demand) would increase the feasibility of new construction. The enhanced feasibility would have more effect on the periphery (in terms of making projects feasible which would not otherwise be feasible). As this occurs, there is likely to be a more sprawled development pattern. The C-3 District would likely end up with a lower share of the new development built in the City. Thus, there would be more effect on development in the C-3 District than elsewhere in the City. The high-end percentages in the table above would likely apply for the C-3 District.
 - In situations where the limits are relatively less constraining, there would be less pressure for sprawl. Development in the C-3 District and elsewhere in the City would be affected more similarly. Thus, the percentages in the table would apply throughout the City including the C-3 District.
- Criteria Which Cost Money: Permits could be allocated based on criteria which cost money to implement, such as the provision of housing, open space, or transportation improvements/mitigations. These could also include more expensive criteria for project design. With these types of criteria, locations in the more desirable office areas are likely to represent a larger share of future development because these developers will be more able to pass on the higher costs through higher rents. Thus, a system using these types of criteria is likely to result in a greater share of new development in the C-3 District and a lower share elsewhere

in the City. Thus, there would be less effect on C-3 District development than on development in other locations. The low-end percentages in the table would apply to the C-3 District in this case.

- Criteria To Direct Development: Permits could be allocated based on criteria which relate to the location of development, such as encouraging development near BART stations, in certain areas where higher density is more desirable, in locations where housing would not be removed, or in locations where historic buildings would not be demolished. It is more difficult to generalize about the effects under these conditions because the outcome depends on the types of locations affected. If the C-3 District had relatively more of the preferred locations, it would receive proportionally more of the new development and thus be less affected by the limits than locations elsewhere in the City. If the C-3 District had fewer of the preferred locations, the reverse would be true.

The comments above could be more applicable to the 1990-2000 period and less applicable to the 1984-1990 period. Since pipeline projects are already identified and planning already underway, it would be more difficult to use various criteria as incentives for achieving certain goals. Also, the limits would not apply in cases where projects were determined to be grandfathered.

Other Uses

The effect of annual limits on office development raises the question of how the development of other uses might be affected. The following comments can be made:

- The amount of office development (and the associated employment in office space) affects the demand for retail and hotel uses. Less office growth of the magnitude indicated by the higher percentages shown in Table VI.1 would mean less growth of retail and hotel uses. However, since these latter uses satisfy demand besides that from office activity, they would be affected much less than office development. For example, in the C-3 District, about one-third of retail demand is from office activity. If office growth were 33 percent less,

retail growth would be about 10 percent less. Reduced office growth would have even less effect on hotel activity (only to the extent that less office activity would mean less business travel).

- The amount of office development could affect the ability of other uses to compete for certain locations. For example, less office expansion could mean less pressure for increased rents in nearby areas and less displacement of other uses for new construction. This effect would be tempered by several considerations. One is that less new construction could mean more rehabilitation, conversions, and upgrading of existing space for office uses. Another is that there are other reasons, besides pressure from office development, why some businesses leave the C-3 District. Therefore, rents could still increase and uses leave the area in spite of the reduced office development.

In general, other uses would be affected much less by the annual limits than would office uses. The exception, of course, would be situations where the criteria for allocating permits favored a particular use (such as retail or housing.)

B. LAND USE AND REAL ESTATE DEVELOPMENT

INTRODUCTION

The concept of the "mitigation of impacts" implies that impacts are disadvantageous and thus best mitigated. It is commonly agreed that a major disturbance of the physical environment is disadvantageous. If the disturbance could be mitigated without foregoing the economic or social benefits, then it is commonly agreed that cost-effective mitigation should be undertaken. The situation with regard to impacts of alternative C-3 District policies is different. Impacts are usually not disadvantageous for everyone; some people benefit and some suffer. For example, more development results in both more jobs and more traffic congestion. Those who seek jobs are likely to benefit and those who are most affected by the traffic congestion will suffer.

Even if a consensus exists as to a disadvantageous impact, there are few public actions that would mitigate the impact without other disadvantageous impacts. The result of a public action to mitigate some disadvantages is more likely to be a change in who benefits and/or who suffers. In terms of the above example, the mitigation of traffic congestion could either increase public costs or limit the choices of those preferring private autos.

The most common forms of public policy designed to mitigate disadvantageous circumstances is to provide an incentive for advantageous behavior. Two characteristics of "incentives" should be acknowledged. The first is that incentives usually contain a cost. Sometimes it is a public dollar cost. More often the cost is another impact that is disadvantageous from another perspective. For example, bonus office space as an incentive for the production of housing results in larger development projects and the disadvantages associated with them. The second observation about incentives is that they compete with each other. If there are extra office space bonuses available as incentives both to produce housing and retain historic buildings, the developer will use whichever incentive he finds the least onerous.

"Requirements" are a form of incentive. For example, the incentives of a housing requirement may be permission to build an office building. Requirements generally impose a cost. It is often intended that the "developer" bear the cost. In reality the cost is often passed on to the land owner and/or the consumer.

When talking about economic activity - development, buildings, employment, housing, etc., the question is not if it will occur, but where it will occur. The economic activity could be in the C-3 District, in the remainder of the City, elsewhere in the Bay Area or outside of the Bay Area. This perspective suggests that mitigation should be considered from a perspective broader than the C-3 District. When it is recognized that there are "deficiencies" in the C-3 District, it may well be that the situation is best improved by providing a balance with activity located elsewhere. In other words, provision should be made to locate economic activity not best located in the C-3 District outside of the District. For example, if the pressures for office space escalate office rents to the extent that certain activities can no longer afford space in the C-3 District, the best solution is probably to facilitate the development of moderate cost space elsewhere in the City.

MAINTAINING A SUPPLY OF LOWER RENT SPACE

The differences in development among Alternatives arise largely from differences in the amount of office space built over time. Generally, less future office development would mean greater competition for available space and greater pressure for higher rents. To the extent that less office development results from policies to redirect the location of C-3 District growth (such as policies to preserve architectural resources or to limit office uses in largely retail or residential areas), actions to facilitate the development of lower cost office space in locations outside the C-3 District could mitigate impacts on space costs. Areas outside the C-3 District, particularly those to the south of Folsom Street, offer the most potential for developing more moderate cost office space in San Francisco. Existing development is of low intensity, and there is the potential for a large amount of newly built space.

Land use policies for office development in these more peripheral areas will have an influence on the amount and type of development which occurs there. From the perspective of maintaining the supply of more moderate rent space, the following factors are important. Policies affecting the size of future development should allow lower-rise construction and the ability to build floors with large amounts of space. Policies should also consider the role of rehabilitated older space in providing lower rent options for smaller firms including provisions to facilitate these trends. Requirements for design, other amenities, and other mitigations should be sensitive to the additional development costs that they might impose. Steps to resolve potential conflicts between existing and future uses should be taken in setting policies for the area, rather than leaving the conflicts to be resolved through time-consuming case-by-case reviews. The potential areas available for these types of office development should be large relative to demand, to limit competition for sites.

Generally, the above types of policies would mitigate the effects of increased competition for C-3 District locations which would occur over time under all Alternatives. The size and scale of existing C-3 District development is already to a level where lower cost options can be best provided in locations outside the C-3 District. Thus, while the C-3 District policies of the Alternatives could increase pressures of this sort, such pressures and trends would exist to some degree under all Alternatives.

RETENTION OF ARCHITECTURAL RESOURCES

The two logical approaches to mitigating the demolition of historic buildings are both included among the policies in the Alternatives. All five Alternatives offer transferable development rights (TDRs), at least in some circumstances, for the retention of an historic building. Alternative 5 would require a conditional review prior to the demolition of an historic building in the two critical areas which contain the majority of threatened historic structures.

TDRs are analyzed extensively elsewhere in this report. The discussion here addresses some critical policy issues with regard to the implementation of a TDR program.

- The design of TDR programs should include consideration as to whether TDRs must be used in the same area of downtown as the historic building contributing the TDRs. Without this restriction, inexpensive TDRs from areas of marginal development profitability will under-price TDRs from critical projects in preferred locations. However, the restriction on area of use can create difficulty in matching the demand and supply of TDRs.
- A TDR program must choose between a larger number of buildings whose retention is sought and a smaller number whose retention is more likely. Since TDRs from all eligible buildings compete with each other, a smaller number of buildings reduces the competition for the TDRs from the most valued buildings.
- The most difficult choice to be made in the design of a TDR program involves a trade-off between flexibility and a simple program consistent over time. An easily understood program adopted and seldom changed has the benefit that the market can trust it and thus market behavior will not discount the incentives offered. On the other hand, such a program cannot be flexible. It is limited in its ability to treat different buildings differently and inadequately reflects changes that occur over time. The greatest flexibility occurs in a case-by-case review, whereby an "appropriate" amount of TDRs are offered consistent with the architectural value of the building and the threat to its demise. It should be noted that unless, and even if, firm criteria are adopted, political pressure, for and against demolitions, will be brought to bear.

The requirement that historic buildings cannot be demolished can either be absolute or, as in Alternative 5, a matter of conditional review. It is likely that such a requirement will be accompanied by a TDR program. In such a situation TDRs can be understood as a mitigation of the economic consequences of the prohibition against demolition.

HOUSING PRODUCTION

The development of additional space in the City, especially space in large office buildings, facilitates the growth of employment in San Francisco and, consequently, adds to the demand for additional housing units. It is not assumed that all of the needed housing should be located in the C-3 District or even in San Francisco. However, if it is decided that the production of housing is needed to mitigate a housing impact, there are three primary public policy approaches from a real estate market perspective.

The first approach is to allow additional space in commercial buildings if that space is devoted to housing. This is the approach included in Alternative 5. Another approach is to provide an FAR bonus of office space as an incentive for the production of housing. This approach is used in Alternatives 2, 3, and 4. The third method to induce housing is to require it as a condition of commercial development; the privilege of commercial development is the incentive. This approach is used in Alternatives 4 and 5.

Because these three mitigation possibilities are components of the Alternatives, they have been analyzed and described extensively elsewhere in this report. The text contains cautions regarding the expected consequences (Sections V.B. and V.D). An important caution is that the incentives may only subsidize units that would have been developed without the incentives. Another caution is that the cost of requiring housing could affect the amount of commercial development and the growth of employment.

The development of office space usually provides little activity on the streets after working hours. One principal mitigation of this situation is to induce housing to be built in such an area. Any of the three approaches described above can be used, but the incentive is available only if the housing is developed in the target area. Thus Alternative 5 allows additional space in a commercial building if that space is devoted to housing. And Alternative 3 provides an FAR office space bonus for

the production of housing, but only if the housing is located within 500 feet of the office project.

The availability of low and moderate income housing is a serious concern in San Francisco. Again, any of the three approaches described above can be used to achieve qualifying housing. The critical feature must be that the incentive is limited to the provision of such.

C. BUSINESS AND EMPLOYMENT

ANNUAL LIMITS ON NEW COMMERCIAL OFFICE DEVELOPMENT IN SAN FRANCISCO

If annual limits on new office development resulted in less office space growth each year, there would also be less office employment growth. Employment growth might not be affected as much as space growth, however, since businesses would attempt to use space more efficiently (higher employment densities) and there would be more pressure to upgrade, expand, and intensify the use of existing space as well as to convert space to office uses.

Among the Alternatives, business activities and employment would be affected less than space under Alternatives 1, 2, and 3, at least for that time during which adaptations (changing densities, intensifying uses) could be made. However, growth limits under these three Alternatives would have a greater effect on the amount of employment growth (see Table VI.1). Under Alternatives 4 and 5, business activities and employment would be affected more similarly to space if growth limits were added since there would be less ability to make further adaptations. In other words, the effect of growth limits on employment growth over and above the effects of the other policies would be less under these Alternatives.

Annual office development limits would lead to higher rents and higher costs of doing business in San Francisco as less space is rationed among uses. Office rents would be highest when the annual limits are most strict. There would be differential effects among office business activities and types of firms largely depending on their preferences for a San Francisco location and their rent-paying abilities. The office activities most affected would be those firms most sensitive to the costs of space. These tend to include smaller office businesses and the back office functions of larger firms as described in the employment impact section. Since the growth limits would apply citywide, the effect of fewer office businesses and less employment growth in San Francisco

would be more economic activity in other Bay Area counties and outside the region.

The criteria for allocating building permits could influence the types of office businesses and functions which are affected. A merit system could be used to encourage certain activities over others. Yet it would be difficult to implement such a system for purposes of business and employment goals since the policies apply to the construction of space and not directly to those who would occupy the space.

Lower growth of office activities and employment could mean less support for other businesses and jobs. These would include retail stores, restaurants, construction activity, and a large range of services such as banking, building maintenance and security, messengers, copying and printing, etc.

Although the amount of office development (and the associated employment in office space) affects the demand for retail space, other factors besides office activity support retail activity. Thus, reduced office growth would have proportionally less effect on retail activity and development. Similarly, office activity could affect business travel and hotel usage, but such effects would make relatively little difference in overall hotel activity and tourism. Because these non-office uses would be affected less than office uses, retail and hotel activities would represent a proportionally larger share of total economic activity if office development were limited by annual limits. Similarly employment opportunities for retail and hotel workers would be affected much less than would job opportunities for office workers.

Less growth of office activities could mean less upward pressure on rents and less displacement of other uses for new construction. This could mean that certain business activities and types of jobs could be retained, at least for a longer time than they otherwise would have been. Cultural, institutional, industrial, and marginal retail activities could be affected in this way. This effect would be tempered by other factors, however. Less new construction could increase the interest in

older, existing space. Further, some businesses would still leave the area for other reasons.

OTHER MITIGATION MEASURES

The choice of an Alternative results in a particular scenario of business activity and employment. Comparison of the Alternatives indicates the effects of various policies on future business activity and jobs.

Changes in policies to support a different scenario of business and employment could be more similar to developing new Alternatives than to mitigating the impacts associated with a chosen Alternative. As described in the summaries of employment impacts (see Tables V.C.8 and V.C.12) there are trade-offs involved in all the Alternatives. The differences often come from putting more emphasis on some goals over others. It is not always possible to achieve all goals at the same time. Recognizing this perspective, there are several types of actions which could be appropriately considered as mitigation measures.

Selective Rezoning

For purposes of encouraging or retaining certain types of businesses and types of jobs, rezoning could be used to preclude or to encourage certain uses. Similar to the policies of Alternatives 4 and 5, specific areas could be designated in other Alternatives for certain specific commercial uses or for industrial activities. The strategy would be to limit some uses thereby preserving more options for other uses. Some of the problems are that uses are not necessarily retained by land use policy if other economic factors do not support certain businesses at that location. Further, the zoning policy more directly affects space or types of uses, and does not directly affect types of businesses or types of jobs. The most difficulty comes when the market wants to upgrade activities within a use category (such as hotels, retail shops, or even smaller offices).

This type of strategy works best if the options for the undesired uses are expanded in other more desirable and acceptable locations. For example, zoning to encourage uses in certain areas outside the C-3 District could be more effective in limiting the pressures that these uses would create in the C-3 District than would actions to try to keep these uses out of the C-3 District. It also works best if definitive actions are taken, such as changing zoning instead of instituting conditional review. Land values (and speculation) tend to remain higher when there is the possibility of certain uses or certain types of development rather than if there was a clear policy to prohibit certain uses or types of activities. In the latter situation, the market would know the rules and be better able to adjust to definitive actions.

Job Training

To better match the skills of workers with the growth of jobs, job training programs could be instituted or expanded. These could include training in basic language and work skills, training for specific job functions and categories, and apprenticeship programs. Generally, there is likely to be more interest in participating in these types of programs from employers with large numbers of entry level jobs. The sponsors for such programs could be employers, groups of employers, or industry association groups.

Construction Of Lower Rent Space

Since the types of businesses and the types of job opportunities are very much affected by the availability and price of space, actions to encourage the construction of lower cost space could directly mitigate some of the impacts of less space and more costly space on businesses that are unable to compete. The construction of lower cost space could probably be done most easily in areas outside the C-3 District without substantially altering C-3 District policy. The real estate analysis provides background on how this could be done.

D. RESIDENCE PATTERNS AND HOUSING

ANNUAL LIMITS ON NEW COMMERCIAL OFFICE DEVELOPMENT IN SAN FRANCISCO

If annual limits on new office development resulted in less office space growth and less growth of employment, there would be implications for residence patterns and housing.

Effects on Residence Patterns

From the perspective of overall residence patterns of those employed in the City, fewer persons employed in San Francisco would result in fewer San Francisco workers residing in each of the counties of the region. The number of these workers living in San Francisco would be affected less than the number in other counties. This is because of the high relative propensity for individuals to live and work in San Francisco. It is also because relatively more growth of non-office employment compared to office employment would mean proportionally more San Francisco residents since the non-office business activities have larger percentages of workers who reside in San Francisco (hotel and retail particularly).

Thus, the overall percentage distribution of workers according to county of residence would include a larger percentage living in San Francisco and smaller percentages for the other parts of the region. The extent of effect on residence patterns depends on the effect on employment. The greater the extent to which office employment growth would be lower because of the annual limits, the larger would be the percentage of workers who live in San Francisco relative to those living in the other counties. Although the percentage would be larger, the number of individuals living and working in San Francisco would be smaller (assuming a constant supply of housing). This would apply under all of the Alternatives.

From the perspective of residents of the City (all those who live in the City as opposed to all those who work in the City), fewer would work in San Francisco if employment growth were limited by office development. Both the number of existing residents who become employed in San Francisco and the number of workers who move into the City would be smaller.

Annual limits on office development could also affect the amount of housing produced in San Francisco. The less office development, the less additional housing development to the extent that an Alternative would have otherwise resulted in a net addition of housing. This would apply under all Alternatives except Alternative 1. Alternatives 2, 3, 4, and 5 all include incentives or requirements for housing production which would be affected by the amount of office development. The extent of effect on housing production would depend on the extent of effect on office development.

Less housing development in San Francisco would mean a smaller number of City residents working in San Francisco and a smaller percentage of City jobs held by residents. The amount of additional housing produced in San Francisco has the opposite effect on residence patterns as the amount of job growth. Thus, it is difficult to generalize about the effect of annual limits on residence patterns since both employment and housing could be directly affected.

Effects on the City's Housing Market

From the perspective of the City's housing market, less employment growth would mean less increase in the competition for San Francisco housing. Less increase in the competition for housing would also mean less increase in the upward pressure on housing prices and rents.

As compared to employment growth, housing growth has the opposite effect on the City's housing market. Less housing growth would mean more competition for San Francisco housing and more upward pressure on housing prices and rents.

VI. Mitigation Measures

Among the Alternatives, it is likely that employment growth and housing growth would be affected relatively proportionally under Alternatives 2, 4, and 5 so that the relationship between these two factors would be similar to the relationships identified for these Alternatives in their present form. Thus, annual limits on office development might not materially affect housing market impacts. Two exceptions could occur. One would be situations in which office development was severely limited resulting in very little additional housing compared to what would otherwise have been produced. In this situation there would be proportionally more effect on housing growth than employment since growth of jobs in non-office business activities would still occur. Another difference could arise under Alternatives where the limits in office space resulted in adaptations in the use of existing space (changing densities, intensifying uses) so that employment was affected less than space. Since the additional housing produced depends on the incentives and requirements applied to the development of office space, housing would be affected proportionally more than employment.

Because little or no housing results from the policies of Alternatives 1 and 3, annual limits on office development would not affect the housing supply. Therefore, lower office employment would result in less competition for San Francisco's housing.

OTHER MITIGATION MEASURES

There are two primary strategies for the mitigation of housing impacts. One is to produce more housing, thereby relieving the increased pressure on the housing market from increased employment. The other is to take steps to reduce the amount of employment growth.

If restrictions on new development were imposed for purposes of limiting employment growth, employment opportunities for both San Francisco residents and non-residents would be fewer than otherwise. The advantage would be that housing price increases would probably be less than otherwise (assuming a similar housing stock in both cases). The annual limits on office development discussed previously could be a policy of this type.

Other types of measures could be undertaken to encourage the development of new housing in San Francisco. Additional housing would mean that housing price increases would be less than otherwise (assuming similar employment). However, in this case, supplying housing would not limit employment opportunities. To the extent that housing is built in San Francisco, lower housing prices would be accompanied by an increase, rather than a decrease, in the number of San Franciscans employed in San Francisco.

Two conditions are necessary for these conclusions about housing production to hold. One is that the housing which is built must represent a net addition to the stock. The other is that the cost of providing housing does not reduce the amount of employment growth. As is the case for Alternative 4 housing policies, there can be feedback between housing programs and employment growth.

While increasing the housing stock keeps housing prices lower than they otherwise would be, in other respects, increased housing supply may not be beneficial. The problem is where to put the new housing. There are often battles over this issue since existing residents often do not want the new housing in their neighborhoods.

Although increasing the housing stock yields benefits, it is difficult to identify how much additional housing should be built. From a regional perspective, an estimate can be developed based on job growth, increases in labor force participation, decreases in unemployment, and changes in the number of workers per household.

It is much more difficult to identify the "proper" amount of housing from the perspective of San Francisco. Adding housing in the City not only would help to accommodate the increase in workers who would otherwise live in San Francisco, but it would also result in a larger number of workers residing in the City. However, while the additional housing would not fully compensate for the demand it was designed to meet (but would further increase that demand), it would reduce competition for existing housing and keep prices and rents lower than

they otherwise would be. The more housing provided, the more successful such a program would be in keeping prices from rising. The amount of housing built elsewhere in the region is also a factor in determining how increases in the supply of San Francisco housing would affect prices and affect the increase in the number of workers who would live in the City.

A reasonable estimate of the extent to which the supply of housing in San Francisco could be increased to keep prices from rising because of employment growth could be developed based on the change actually expected in C-3 District workers residing in San Francisco. The housing impact section presents detailed forecasts of residence patterns for all of the Alternatives.

If it is decided that the production of housing in San Francisco is the desired approach for mitigating housing impacts, there are several kinds of public policy strategies and programs which could be pursued. The following list identifies several types of measures. The strongest strategy would probably include a combination of these measures with joint public/private cooperation.

Consideration of measures to increase the supply of housing in San Francisco must include local, regional, and national factors influencing housing markets. Local actions should work within this context, recognizing that many factors beyond local public policy control may have greater influence on future housing supply and could make it difficult to implement policies to meet local objectives.

- Encourage housing production by creating incentives for commercial developers. Such incentives could include office space bonuses for developing housing. The real estate development sections of this report (Section V.B, Section VI.B, and Appendix G) discuss these types of measures in detail. The Alternatives include a variety of different incentives which were tested in the analysis done for this study.

- Require housing production as a condition of new development. This strategy was evaluated in this study since Alternatives 4 and 5 propose housing requirements as a condition for office development. Evaluation was also done of the effectiveness of combining housing requirements and housing incentives. An issue in choosing to implement housing requirements is the concern for the cost of meeting the requirement and the effect of that cost on economic growth. Another issue is the desirability of encouraging in-lieu contributions to a City housing program as an option to housing development. The contributions may provide more flexibility in meeting a greater range of housing needs. If implemented, the effects of housing requirements should probably be monitored to check for feedback on job growth and to fine tune the regulations.
- Take steps to increase the locations and the densities for housing uses throughout the City. These actions could include: changes in zoning to allow higher densities of residential development in some areas; making surplus public property available for housing development; and considering the legalization of secondary units as a part of existing housing. These types of actions are all considered in the City's Housing Element. Related steps might include the evaluation of the effect of other policies (such as rent control) on the production of housing in the City.
- Consider the use of tax exempt mortgage revenue bonds and other financing techniques (as may be available) to provide financing at below market rates and thereby stimulate the production of units that may not otherwise be built, at least not of the same types or at the same prices and rents. The City has already used these techniques effectively.

VI. Mitigation Measures

E. TRANSPORTATION AND CIRCULATION

BACKGROUND

Conditions expected in the year 2000 under each of the five Alternatives indicate that public transportation ridership, traffic volumes and parking demand would approach or exceed expected capacities. Pedestrian circulation would be in the "constrained" category at several locations in the study area.

Mitigation for transportation impacts is important primarily during peak commuting hours. Reduction in peak-hour travel by shifting travel to other time periods or by transporting more people in fewer vehicles are the primary objectives. Transporting more people in fewer vehicles is also important on a daily basis but sufficient capacity would be available for all modes during off-peak (mid-day) hours.

PUBLIC TRANSPORTATION

As indicated in Section V.E of this report, transit ridership is expected to increase in the future. Transit capacity has also been assumed to increase in the future. Measures proposed to provide the necessary increases in capacity and, additionally, to reduce the impacts include the following:

- Additional capacity through more or larger vehicles and more routes.
- Improved efficiency through improved maintenance and newer vehicles.
- Additional outlying parking and improved feeder service to BART and CalTrain.
- Staggered work-hours or flex-time to reduce the peak-hour demand.

The key factor in transit mitigation (except for staggered work-hours) is funding for both capital expenditures and operating costs. Possible funding sources include increased farebox revenues and government subsidies and grants. The public sector funding would most likely come from sales tax, property tax, excise tax, income tax, parking charges, fuel tax, vehicle charges or fees, bridge toll surcharges, benefit assessment districts, and tidelands oil revenues.

VI. Mitigation Measures

As part of the impacts analysis, the capacity of each transit agency for each of the analysis years has been assumed to incorporate plans and programs published in each agency's five-year planning documents. The following mitigation measures list the improvements and programs that would have to be implemented by each transit agency to provide the capacity levels assumed for the impact analysis. The measures are based on the 1982-87 Five-year Plans for the respective agencies. The improvements outlined in the Five-year Plans have been expanded to include capacity requirements necessary to meet projected demand through the year 2000. Provision of most of the suggested measures have been indicated in the 1982-87 Five-year Plans. Funding for some of the longer range programs has not yet been identified.

AC Transit

Replace or rebuild older buses to maintain the overall fleet serviceability. Improve coordination with other agencies to improve regional transit and create a more desirable system, thus encouraging transit ridership and shifts from other modes. Improve coordination with Muni and BART through transfer fares and transfer points to also add to the attraction of transit. AC Transit could also generate greater ridership through effective consumer education communications. Transbay service increases through the addition of new routes (although new equipment may increase existing route capacity) is being discouraged by the Metropolitan Transportation Commission (MTC) because the AC routes are in competition with BART. Rather, AC is being directed to provide enhanced feeder bus service to East Bay BART stations to allow C-3 District commuters to use BART's more comprehensive downtown San Francisco system of stations.

BART

Increase capacity through planned capital improvements which would add more cars per train and more trains in the system than is currently possible. The current 3.5 minute headways (time between trains) at the Daly City Station would be reduced to 2.25 minutes upon completion of the Turnback/Storage Facility at Daly City. Capital improvements necessary to provide the level of capacity needed by the year 2000 include replacement of the central train control computer. The current system limit is a total of 49 trains; expansion to 75 trains would be needed by 1990 and expansion to 115 trains would be needed by the year 2000 to provide the capacity assumed for the impact analysis.

VI. Mitigation Measures

Programs to increase reliability and safety, while not having a direct effect on capacity, would be necessary to generate greater ridership and shift passengers from other modes.

CalTrain

Increase coordination of train schedules with local transit (SamTrans, Santa Clara County Transit, Muni) feeder buses and fare systems to improve service and attract additional passengers. New locomotives and passenger cars would need to be purchased. Rehabilitation of stations, including increased parking at the stations and possible relocation of some stations, would aid in attracting new passengers.

Golden Gate Transit

Expand service levels and times of operation. Additional buses would need to be purchased prior to 1990 and more would be necessary prior to 2000. Periodic studies of future development patterns in Marin and Sonoma Counties would help determine the market for transit services and aid in the cost effective deployment of equipment and facilities serving the market. Conversion of the ferry fleet to diesel power and operation of all three Larkspur ferries would need to be implemented. Improved access to the ferry system through expanded feeder bus service and carpool and vanpool matching may attract more passengers. Additional and improved Muni service to the Ferry Terminal (see Figure IV.E.2, p. IV.E.4) would aid in increasing ridership. Golden Gate Transit would need to consider re-structuring bus routes, providing express bus service to park-and-ride lots, implementing innovative carpool and vanpool programs, and improve dissemination of ridesharing information.

San Francisco Municipal Railway

Implement a capital improvement program that would meet the following criteria:

- Increased efficiency
- Improved service reliability
- Improved service convenience
- Increased service capacity

VI. Mitigation Measures

All of the items listed are important parts of transit mitigation measures. Muni capital improvement projects would include rebuilding of the cable car system, rebuilding and expanding the trolley overhead system for surface and underground lines, purchasing new and larger vehicles and other equipment, and reconstruction of stations. The primary mitigation measures for Muni include additional vehicles, improved service reliability, and improved schedule performance.

Muni system operations would be a major factor in transit use by C-3 District employees, both those employees who live in San Francisco and those who would transfer to Muni from other transit agency routes. The route structure of the Muni system would be expected to change between 1984 and 1990 and between 1990 and 2000. The impact analysis has not attempted to predict how Muni route structure would change. Rather, the analysis has assumed that service would be provided in a fashion similar to the existing route structure; proposed system-wide capacity improvements were applied to that structure. Current programs that depend upon a common fare between BART (in San Francisco) and Muni, have the potential to allow Muni to restructure downtown serving routes to provide feeder service to BART. Such programs have the potential to attract ridership from other modes as the travel time on transit between outlying residential areas in San Francisco and downtown would be reduced.

San Mateo County Transit District

Implement measures to meet future demand, including promotion of staggered work-hours, expansion of feeder bus service to the Daly City BART Station and CalTrain stations in San Mateo County, expansion of the role of SamTrans as a broker of information for (and possibly a provider of) carpooling and vanpooling services, and continued coordination with CalTrans in the development of park-and-ride facilities for carpools, vanpools, and transit passengers. Purchasing of additional equipment would also be necessary.

Regional Transit Mitigation

A major step in promoting transit use throughout the region would be the development of a common transit fare system (a regional transit pass) that would allow a passenger to transfer between systems without having to obtain a new ticket on each agency. A

VI. Mitigation Measures

region-wide transit pass would require transit funding to be operated on a regional basis rather than on the current system of transit districts. A regional transit pass would reduce the cost and the complexity of a multi-system transit trip and would allow agencies that now provide competing service (Bart/AC, SamTrans/CalTrain, Muni/BART, Golden Gate, SamTrans) to optimize the structure of routes and service provided.

TRAFFIC

Mitigation for traffic impacts is related to mitigation for transit. An overall reduction in the total number of vehicles traveling during the peak hour would improve conditions for automobiles, trucks and buses. Mitigation for automobile traffic includes increasing roadway capacity (where feasible and cost effective), and reducing vehicular traffic through increased ridesharing (carpool, vanpool, and transit), and flexible or staggered work-hours. The primary constraints for traffic traveling to or from San Francisco are the capacities of the Bay Bridge (to and from the east), the Golden Gate Bridge (to and from the north), and the freeways and surface streets (to and from the south).

As noted in the Section V.E, roadways would be at or beyond capacity in 2000 under each of the Alternatives. Some widening of the freeways and roadways to the south is possible. However, additional vehicle capacity on the two bridges is unlikely. Additional person-capacity is possible with more or larger buses, additional ferries, and expanded BART service. The key mitigation for vehicle traffic would be measures to shift drivers and others to transit to high occupancy vehicles (HOV), or to travel during off-peak hours. In addition, additional housing in the downtown area would aid in reducing regional travel during the peak hour. Increased parking fees for long-term parking, for vehicles arriving during the a.m. peak hour, and for low occupancy vehicles are measures designed to discourage commute vehicle traffic during the peak hour, to discourage trips for commuting our purposes, and to provide additional funding for transit expansion.

Other possible mitigation measures include expanded carpool lanes, reserved transit lanes (including counter-flow), additional park-and-ride lots, and improved carpool and vanpool matching services through improved education programs, transportation coordinator activities at employment centers, preferential parking for vanpools and employer subsidies of ridesharing or transit use.

PARKING

The demand for parking would be essentially greater than the supply expected in the year 2000 under each of the Alternatives. Although this lack of adequate parking would be expected to encourage transit ridership, the transit (without any additional shift from vehicles) ridership would be near the capacities of most transit systems for the peak hour.

The inter-relationship of long-term and short-term parking supply, parking cost, transit ridership, vehicular traffic, and roadway capacity (and congestion levels) is quite complex. However, a balance or equilibrium condition would be expected to be achieved. Short-term parking availability in the C-3 District could be adversely affected by long-term demand unsatisfied. Therefore, provision of additional parking would be considered a mitigation measure. Additional parking could be required for new developments. New long-term parking could be provided in some areas, particularly south of Market Street. Shuttle buses to these parking areas could be provided by Muni, if the funding were available.

For parking to be effectively used as a tool to control automobile use in the C-3 District, the City would need to assume full responsibility for operation (hours and rates), of all parking facilities in the downtown area (not just the C-3). The Transportation Element of the Comprehensive Plan outlines objectives and policies for the provision of short-term parking in the C-3 District and long-term parking in the surrounding districts./1/ If the City were to effectively control all off-street parking (rather than administer policy as has been done to date), then a major effort at reducing automobile traffic in the C-3 District could be made.

PEDESTRIAN CIRCULATION

Pedestrian activity is expected to be in the "Constrained" category at certain locations in the study area. Since these locations were selected as general indicators of the level of pedestrian activity in the C-3 District, worse conditions could be expected at some locations. An earlier pedestrian study indicated that "Crowded" conditions for platoon flow could occur in the vicinity of Pine, Davis, California and Front Streets and "Crowded/Congested" levels could occur on Montgomery Street between Pine and Market./2/

VI. Mitigation Measures

Mitigation measures (including those noted in the earlier study) to improve pedestrian flow include:

- Increased building setbacks
- Bulbed curbs to allow additional pedestrian storage space
- Sidewalk widening into parking areas of streets
- Establishing alleys as pedestrian streets
- Removal/relocation of bus stops, street furniture, shelters and sidewalk vendors
- Removal/relocation of crosswalks and emergency loading areas
- Consideration of pedestrian malls
- Underground pedestrian ways connecting major buildings and transit stations
- Improved signal phasing
- Improved crosswalk markings
- Turning restrictions for vehicles at intersections
- Time restrictions on use of sidewalk freight elevators
- Vehicle prohibition in certain areas during specified periods
- Increased enforcement of existing regulations regarding sidewalk use, parking

POSSIBLE EFFECTS OF ANNUAL GROWTH LIMITS

The possible effects on transportation on annual growth limits of 1.5 million square feet, 1.0 million square feet, and 0.5 million square feet on office development were examined. Since the actual method of allocating and applying any one of these effects is not known, some assumptions were necessary to determine the effects of the growth limits.

The percent reductions in Citywide office development under each future year and for the five Alternatives were developed by Recht Hausrath and Associates (see Section VI.A.). The percent reductions in office space were developed as ranges with a 10 percent difference between the low and the high figure.

The reduction factors are shown in Table VI.1, p. VI.A.2. The reductions in office space were considered to be applied Citywide. Since travel patterns for office development in locations other than the C-3 District is not well documented, it was not possible to determine the reduction in Citywide trips. However, estimates of travel change were

VI. Mitigation Measures

made by applying the reduction percentages directly to the number of C-3 District office employees. The total expected peak hour person trip-ends and percent change from conditions expected without the annual growth limits are shown in Table VI.E.1. If growth limits were in effect, the ratio of office employees per square feet (assumed to remain constant for this analysis) could possibly increase to more employees per square feet which would lessen the reduction in the number of trips shown in Table VI.E.1.

NOTES - Transportation and Circulation

/1/ City and County of San Francisco, Comprehensive Plan, "The Plan for Transportation," as amended through June 24, 1982.

/2/ Wilbur Smith & Associates, San Francisco Center City Pedestrian Circulation and Goods Movement Study, September, 1980.

TABLE VI.E.1: TRANSPORTATION EFFECTS OF ANNUAL GROWTH LIMITS, 1990, 2000, ALTERNATIVES 1 THROUGH 5

Annual Limit(a)	1990		2000, Alternative 1		2000, Alternative 2		2000, Alternative 3		2000, Alternative 4		2000, Alternative 5	
	Person Trip-ends(b)	Percent Change(c)	Person Trip-ends(b)	Percent Change(c)	Person Trip-ends(b)	Percent Change(c)	Person Trip-ends(b)	Percent Change(c)	Person Trip-ends(b)	Percent Change(c)	Person Trip-ends(b)	Percent Change(c)
1.5	197,037	-3.0	227,310	-5.3	225,900	-5.1	226,940	-3.6	228,790	-	229,300	-
1.0	191,902	-5.6	221,070	-7.9	219,950	-7.6	219,880	-6.6	228,790	-	222,420	-3.0
0.5	186,767	-8.1	214,830	-10.5	214,000	-10.1	212,580	-9.7	217,350	-5.0	213,480	-6.9
No Limit	203,200	-	240,030	-	238,040	-	235,420	-	228,790	-	229,300	-

(a) Growth limit in million of square feet of office space per year

(b) P.M. peak-hour person trip-ends generated by office space only

(c) Percent change from No Limits, where No Limits represents the amount of office space that could be developed as reported in Section V.E

SOURCE: TJKM Transportation Consultants

F. COMMUNITY SERVICES

SOLID WASTE

Annual Limits on New Commercial Office Development in City

Application of annual office development limits to the City as a whole would reduce the rate of growth of solid waste generation from the C-3 District. Table VI.F.1 below, projects solid waste generation from the C-3 District in 1990 and for each of the Alternatives in 2000, based on the assumption that the annual development limits shown are applied starting in 1984. It should be noted that solid waste generation from the C-3 District currently makes up about 13% of the total amount generated by the City (see Section IV.F.). Although projected C-3 District solid waste could be reduced by development limits, particularly for Alternatives 1 and 2, these reductions would likely not postpone the need for either new landfill sites or methods of disposal after 1988.

Mitigation Measures Identified By This Report

The Department of City Planning could require as a condition of project approval, through its discretionary and conditional use review processes, that new office and residential buildings include prominently marked and conveniently placed refuse materials bins, basement storage areas for recycled materials, and that building management implement a recycling program (including designation of a recycling coordinator). Of particular importance would be recycling of paper which constitutes between 60% and 70% of the waste generated by office buildings. The materials in these recycling bins could then either be made available to the disposal contractor for pick-up and recycling, if such a program is available, or taken to local recycling centers by building management staff or recycling contractors. Should separate collection of metals and glass become available citywide, the Department of City Planning could also require that food service operations be included in recycling programs. The City's Refuse Collection and Disposal Rate Board could amend the Golden Gate Disposal Company's rate structure to favor buildings which have recycling programs. Implementation of these measures would slow projected increases (see Table V.F.1) in San Francisco's solid waste generation, thus possibly extending the life of future landfill sites. These measures would conform with Board of Supervisors Resolution No. 884-79, enacted in September 1979, which encourages

VI. Mitigation Measures

TABLE VI.F.1: C-3 DISTRICT SOLID WASTE GENERATION WITH ANNUAL LIMITS ON COMMERCIAL OFFICE DEVELOPMENT

Annual Office Development Limit in City (million/ sq. ft.)	Solid Waste Generation (tons/year)						% Reduction in C-3 District Solid Waste Generation (a)					
	2000 by Alternative						2000 by Alternative					
	1990	1	2	3	4	5	1990	1	2	3	4	5
1.5	86,410	96,750	96,120	95,710	95,100	94,440	2	4	4	3	0	0
1.0	84,700	94,150	93,730	93,090	95,100	92,900	4	7	7	5	0	2
0.5	83,000	91,560	91,330	90,470	92,540	90,530	6	10	9	8	3	4

(a) See Table V.F.1 showing solid waste generation under each Alternative.

NOTE: All numbers are rounded to the nearest 10 tons.

SOURCE: Environmental Science Associates, Inc., using information provided by the Golden Gate Disposal Company.

recycling, and would contribute toward the goal of the Final Draft Solid Waste Management Plan to increase recycling from current levels of about 20% to 25% by 1986 and 35% over the long term.

The Board of Supervisors could amend the Building Code to require all new Downtown buildings to provide bins and storage areas for recyclable materials and recycle recyclable materials. This measure would reinforce the measure outlined above.

The City could purchase balers (compactors) to reduce the volume of collected solid waste. Balers can compact solid waste from about one-half its original volume up to about one-tenth its original volume. Although this would reduce the overall volume of solid waste requiring landfill, it is likely to have only limited benefit for the City. The balers would be expensive, would use energy and would not reduce transfer truck trips, because transfer-truck capacity is limited by weight, not volume. Furthermore, because

VI. Mitigation Measures

landfill contracts and tip fees are based on total weight of the solid waste and years of use, landfill use by the City could only be extended if the terms of existing contracts were renegotiated. Compacting waste would conserve landfill space, increasing landfill capacity and thereby potentially increasing the economic return to the landfill operator and reducing future needs for new landfill sites.

POLICE

Annual Limits on New Commercial Office Development in City

Application of annual office development limits to the City as a whole would probably have little effect on projected increases in annual criminal incidents in the C-3 District, because office space has among the lowest crime rates (annual incidents per square foot per year) of all Downtown San Francisco land uses (see Appendix K). Table VI.F.2, below, shows how the projected increases in annual incidents in the C-3 District (detailed in Table V.F.2) would be affected by office development limits. The greatest reduction likely to be achieved, a reduction of about 240 incidents per year (for the

TABLE VI.F.2: PROJECTED CHANGES IN REPORTED CRIMINAL INCIDENTS PER YEAR IN THE C-3 DISTRICT WITH ANNUAL LIMITS ON COMMERCIAL OFFICE DEVELOPMENT, BY ALTERNATIVE

Annual Office Development Limit in City	Change in Reported Criminal Incidents per Year					
	1990-2000 By Alternative					
	1984-90	1	2	3	4	5
No Limit	+731	+1,142	+1,479	+1,006	+738	+750
1.5 million sq. ft.	+689	+1,030	+1,376	+941	+738	+750
1.0 million sq. ft.	+647	+996	+1,317	+877	+738	+713
0.5 million sq. ft.	+605	+902	+1,258	+812	+675	+653

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department.

VI. Mitigation Measures

0.5-million-sq. ft. annual limit applied to Alternative 2 between 1990 and 2000), would be no more than 1 % fewer incidents in the C-3 District as a whole in the year 2000./1/

Mitigation Measures Identified by this Report

The Board of Supervisors could amend the City Planning Code Use District designations for Subarea 5, the Tenderloin Subarea, to restrict the construction of major new retail uses there. Retail uses tend to offer the greatest opportunities for criminal incidents anywhere in the C-3 District, but particularly in the Tenderloin (see Appendix K). Although it is not possible to quantify the effectiveness of this measure, the following example illustrates its possible effectiveness. If it were possible to divert all of the projected new retail development between 1990 and 2000 in Subarea 5, under Alternative 1, (about 139,000 square feet) to Subarea 1, the projected increase in annual incidents associated with that retail space over that period could be reduced from about 80 incidents to about one incident.

FIRE

Application of annual office development limits to the City as a whole would have almost no effect on projected annual fire incidents in the C-3 District, because new high-rise office space has a very low incidence of fire incidents (see Section V.F. and Appendix K). Because changes in non-fire incidents are more dependent on changes in population density than on building construction, annual office development limits could have a small effect on reducing projected non-fire incidents. See Table VI.F.3, below.

NOTE - Community Services

/1/ Based on the estimate that about 23,000 incidents currently occur in the C-3 District annually.

VI. Mitigation Measures

TABLE VI.F.3: C-3 DISTRICT FIRE AND NON-FIRE INCIDENTS WITH ANNUAL LIMITS ON COMMERCIAL OFFICE DEVELOPMENT

Annual Office Development Limit in City (million/ sq. ft.)	<u>Annual Fire Incidents in C-3 District</u>						<u>% Reduction in C-3 District Fire Incidents (a)</u>					
	<u>2000 by Alternative</u>						<u>2000 by Alternative</u>					
	<u>1990</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>1990</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1.5	1,289	1,295	1,299	1,296	1,300	1,295	*	0.2	0.1	0.1	*	*
1.0	1,288	1,294	1,298	1,295	1,300	1,294	0.1	0.2	0.2	0.2	*	0.1
0.5	1,288	1,293	1,297	1,294	1,299	1,294	0.1	0.3	0.2	0.2	0.1	0.1
	<u>Annual Non-Fire Incidents in C-3 District</u>						<u>% Reduction in C-3 District Non-Fire Incidents (a)</u>					
1.5	6,427	6,548	6,549	6,541	6,531	6,522	0.3	0.7	0.7	0.4	*	*
1.0	6,410	6,522	6,524	6,514	6,531	6,506	0.5	1.1	1.0	0.8	*	0.2
0.5	6,392	6,495	6,500	6,488	6,505	6,482	0.8	1.5	1.4	1.2	0.4	0.6

(a) Compare with Table V.F.5 showing fire and non-fire incidents for each Alternative.

* Less than 0.1 %

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

G. FISCAL FACTORS

ANNUAL LIMITS ON NEW OFFICE DEVELOPMENT IN SAN FRANCISCO

If annual limits on new office development resulted in less office growth each year, it is likely the additional annual revenues and costs estimated in this report would be less. It is also likely that the amount by which revenues and costs would be less than the estimates would not be proportional to the difference in total space added to the C-3 District.

Revenues would be less with limits on new office development because the office space not built would have resulted in additional City taxes associated with changes in space and activity. Property taxes would be lower if less new space is constructed. Yet, property taxes would not be lower by the same percentage reduction in new space. This is because limits on space would cause rents to increase and land values to rise. Thus, although the amount of new space constructed under the limits would be less than without the limits, the space would be added to the City's assessment roll at higher values. The limits on new office development also would increase the likelihood that non-office space would be converted to office space. The increased assessed value of the converted space would add more value to the assessment roll than would have occurred without the limits. The higher value of new space and the likelihood for more conversions could offset, to some extent, the additional property taxes foregone by limiting the amount of new office development.

There would be similar effects on other revenue sources influenced by C-3 District growth. Sales taxes, payroll/business taxes, and hotel taxes are likely to be lower with limits on office development, since changes in employment, business activity, and hotel space would be smaller if less new office space is added to the District. Office employment growth might not be affected as much as the growth of office space, however, thus resulting in higher employment densities as businesses use space more efficiently. As a consequence, additional

revenues from the payroll/business tax would probably not be lower by the same percentage that growth in total space is lower. To the extent that higher rents for office space would result in larger businesses or executive/administrative/managerial business functions representing a greater share of additional business activities than without the limits, the average wages of C-3 District workers might be higher. This would cause the average payroll/business tax per additional employee to be higher.

Less office growth would mean less growth of retail and hotel uses. Yet, since retail and hotel activities satisfy demand besides that created by offices, they would be affected much less than office development. Although additional revenues from the retail sales tax and hotel tax would be lower if limits were imposed on the growth of new offices, the additional revenues would not be lower by the same percentage that growth in total space is lower.

In general, then, growth limits are likely to result in lower additional revenues than estimated in this report. Because revenues are likely to be affected less by growth limits than the amount of total space added to the District, the average additional revenues per sq. ft. of new space could be higher with the limits than without.

The effects of growth limits on the costs for additional services to the C-3 District probably would be similar to the effects on revenues. The cost of providing additional peak period Muni service would be lower because District employment (and Muni ridership) would grow by a smaller amount if limits were imposed on office development. Yet, the growth of employment (and transit ridership) would be affected less than the growth of office space. Thus, additional Muni costs would not be lower by the same percentage as the change in total space is lower. One factor that could modify this conclusion is the possibility that changes in the type of business activities in office space resulting from limits on the amount of office development would reduce the likelihood of additional workers using Muni (if, for example, changes in occupations and incomes of office workers reduce the probability that workers would use public transit as opposed to other modes of transportation).

The additional costs for police services in the C-3 District would be lower if less new office space is added. The effect may not be large, however, because new office space would account for a relatively small portion of the additional demand for police services in the District. Police services are likely to be affected more by reductions in the amount of retail and hotel space added to the District. Since changes in retail and hotel space would be affected less than changes in office space by limits on new office development, the additional cost for police services would not be lower by the same percentage as the change in total space is lower.

The additional cost of fire services to the C-3 District may not be affected by growth limits. The only additional costs anticipated for fire services would be for fire inspectors. Yet, because few additional inspectors would be needed under the Alternatives (only one each with Alternatives 1 and 2 during the 1990-2000 period, and none for the other Alternatives during the same period), lower amounts of office growth may not reduce the inspection demand sufficiently to obviate the need for the small increase in service.

In general, the growth limits are likely to result in lower additional service costs than estimated in this report. Because costs are likely to be affected less by growth limits than the amount of total space added to the District, the average additional costs per sq. ft. of new space could be somewhat higher with the limits than without.

Revenues and costs are likely to be affected similarly by limits on the amount of new office development. Both would be less than if no limits were imposed, but not by the same percentage as the change in total space added to the C-3 District. It is unlikely that the effects of the growth limits would alter the conclusions of the fiscal analysis; that is, the additional annual revenues would still be expected to exceed the additional annual costs for police, fire, and Muni services. The magnitude of the revenue/cost differential could be reduced, however. Since the limits would affect Alternatives 4 and 5 less than the other Alternatives, it is possible that these two Alternatives would improve

their standing with respect to the revenue/cost differential. (For example, if the growth limits reduce the revenue/cost differential more under Alternatives 1, 2, and 3, than under Alternatives 4 and 5, the variance among Alternatives would be less. Whether revenues would then exceed costs by a larger amount under Alternatives 4 and 5 than the other Alternatives is uncertain.)

MITIGATION MEASURES

The fiscal analysis in this report concluded that, under all Alternatives, changes in space and activity in the C-3 District would result in additional general fund revenues that would exceed the additional costs of providing police, fire, and Muni service to the District. Because the revenue/cost differential would be large under all Alternatives, it might be suggested that the fiscal benefits that result from such a revenue "surplus" would not warrant any mitigation. There are, however, several issues that should be considered when evaluating the fiscal impacts of C-3 District growth.

Muni fare revenues and special transit revenues affected by C-3 District growth (including the transit impact development fee) would not be large enough to pay for the full additional cost of Muni services. This would be the case for all Alternatives. The analysis assumed that the resulting Muni deficit would be financed with additional general fund revenues from C-3 District growth. Although the City's general fund presently subsidizes a large share of the cost of Muni services, it might be desirable to reduce Muni's reliance on general fund revenues.

The responsibility for financing the additional Muni costs could be shifted from the general fund to other revenue sources. There would be several potential sources to consider:

- State and federal transit grants presently finance a large share of Muni's capital and operating requirements. These revenues were not included in the forecasts for this report, since the receipt of future grants may not be directly attributable to changes in space and activity

that occur in the C-3 District. Moreover, the continuation of the grant programs themselves is uncertain. Yet, if revenues were available from these sources to partially offset the additional costs of C-3 District Muni service, the dependency on additional general fund revenues could be reduced. Efforts could be made to encourage state and federal lawmakers to maintain or augment transit aid programs and to increase local allotments.

- The San Francisco Municipal Railway Improvement Corporation (SFMRIC) is a non-profit corporation established to sell bonds to finance transit improvements. Bonds issued by SFMRIC could be used to pay for vehicles and other capital facilities needed to accommodate additional C-3 District Muni service. The bonds could be retired by revenues from Muni fares, the transit impact development fee, or other City revenue sources. It is possible that the present bonding capacity of SFMRIC could be fully utilized by other transit capital requirements anticipated independent of C-3 District growth. If that is the case, an increase in SFMRIC's bonding capacity would require the approval of City voters./1/
- The transit impact development fee presently has an upper limit that cannot be adjusted to account for inflation. Future inflation would decrease the purchasing power of the fee. If the fee could be adjusted for inflation over time the revenues collected from C-3 District office development would be higher.
- Other sources of additional revenue for Muni include higher fares and special taxes or fees (including transit assessment districts).

Another issue that relates to fiscal mitigations is the effect of C-3 District growth on City revenues and services not analyzed in this report. As discussed in Section V.G (Fiscal Impacts), there are likely to be other direct and indirect effects on City services as a consequence of changes in space and activity in the District. It is uncertain whether these effects on services would result in more or less costs than the other direct and indirect revenues not specifically considered here. In the event other costs were higher than other revenues, the revenue "surplus" estimated under all Alternatives could be used to pay for these services. This "surplus" would mitigate the

effect of C-3 District growth on direct and indirect costs not estimated here. To the extent that other costs were equal to or lower than other revenues, the revenue "surplus" could be used to finance City services unaffected by C-3 District growth.

NOTES - Fiscal Factors

- /1/ Dean L. Macris, "Muni's Plans to Accommodate Downtown Growth," memorandum to City Planning Commission, August 5, 1982.

H. URBAN DESIGN

1. ARCHITECTURAL RESOURCES

The development of new buildings and the preservation or demolition of old buildings may be influenced by land use and planning regulations and the environmental review process. The five Alternatives for downtown growth management examined in this report incorporate several measures that would reduce the impacts of downtown development on architectural resources. These measures could be implemented by the San Francisco Board of Supervisors, the City Planning Commission or the Department of City Planning. They have been developed in the course of examining the provisions of the Alternatives and other existing and proposed growth regulations and preservation programs in San Francisco and other North American cities. Several of these measures are described in detail in A Preservation Strategy for Downtown San Francisco, prepared by John M. Sanger Associates, Inc./1/

Regulatory Mechanisms

- Strengthen Article 10, San Francisco Planning Code, to prohibit demolition of buildings designated for preservation by the City Planning Commission.
- Redefine the role of the Landmarks Preservation Advisory Board with the intent of increasing its responsibility and strengthening its authority for City preservation policies and actions. Possible mechanisms include delegating to the Board more decision-making powers for issues over which their role is now advisory and including in the City Planning Commission one or more voting Board members when issues of preservation arise.
- Apply, where appropriate, the State Historical Building Code with the intent of minimizing the economic and regulatory burdens typically encountered in rehabilitation. /2/
- Apply a city-wide Annual Growth Limit to the construction of commercial office space (see page VI.H.3).

Economic Incentives

- Create a program, to be administered city-wide or in specific areas by a City or Redevelopment Agency, which issues Marks Historical Rehabilitation Act Bonds /3/ in order to provide low-cost financing for the rehabilitation of architectural resources.
- Enter into historical property contracts, as provided by the Mills Act /4/, to provide financial assistance to owners of significant buildings by reducing property tax assessments in exchange for the owner's preserving and rehabilitating the structure.
- Encourage wider use of TDRs as a mitigation measure by insuring their workability through complementary preservation goals and measures /5/.
- Modify the Planning Code to adjust the value of transferable unused floor area ratios (FARs) to the level of significance of the resource and/or the location from which, or to which, the transfer is being made. Possible mechanisms include graduated TDR ratios and transfer bonuses.
- Apply for certification by the Department of the Interior of the local historic district ordinance and downtown historic districts to allow property owners access to federal tax benefits for the rehabilitation of eligible resources and for the charitable contribution of facade or conservation easements, without the more cumbersome and time-consuming procedures of National Register nomination. /7/

Other Measures

- Establish a Development Rights Bank under the sponsorship of the City or a quasi-public agency to; 1) create an initial market in TDRs, 2) solicit tax-deductible donations of TDRs, and/or 3) hold development rights to publicly owned architectural resources.
- Condemn development rights of selected architectural resources under the City's power of eminent domain. Property owners could be compensated by "zoning by special assessment-financed eminent domain" and/or with special assessment of downtown properties and/or with development rights accumulated in a Development Rights Bank. /8/

VI. Mitigation Measures

- Develop standards for partial preservation when new construction on the site of an architectural resource is determined to be approvable. Possible measures could include changes in Article 10 of the San Francisco Planning Code to define and govern partial preservation and to provide complementary regulatory and economic mechanisms which address the relative value of the features preserved and the degree of retention.
- Refine the existing list of architecturally and/or historically significant buildings identified by the Commission for preservation to reflect the use of consistent criteria which incorporate both qualitative (eg. architectural merit) and quantitative standards (eg. the location of the resource and the resource density of the area). The list should provide a hierarchy of ratings for determining the levels of restrictions, incentives and protections applicable to listed buildings.

Annual Growth Limits

Annual growth limits on new office construction in the City would affect the number of sites developed and, therefore, the number of architectural resources threatened in the C-3 District. Table VI.H.1 shows the projected numbers of resources that would be susceptible to conversion under each Alternative by the year 2000, assuming that the ratio of new office construction in the C-3 District to new office construction in the City as a whole remains constant regardless of the level of the growth limit.

As may be seen by comparing Tables V.H.1.1 and VI.H.1.1, the 0.5 and 1.0 million sq. ft. annual limits would reduce the numbers of vulnerable resources under all Alternatives, and the 1.5 million sq. ft. limit would reduce the numbers of vulnerable resources under all Alternatives except 4 and 5. In no case would the number of vulnerable resources be increased above those forecast in Section V by imposing regulatory growth limits.

NOTES - Architectural Resources

- /1/ A Preservation Strategy for Downtown San Francisco, prepared for the Foundation for San Francisco's Architectural Heritage by John M. Sanger Associates, Inc., 1982. See especially Section VI.C, "A Proposed Preservation Strategy for Downtown San Francisco," (pp. 105-109). The document is available for public review at the Department of City Planning, 450 McAllister Street, and is hereby incorporated by reference into this report.

TABLE VI.H.1.1: C-3 DISTRICT ARCHITECTURAL RESOURCES SUSCEPTIBLE TO CONVERSION BY 1990 AND 2000 ASSUMING ANNUAL GROWTH LIMITS EFFECTIVE IN 1984, WITH AND WITHOUT TDR (a)

Annual Growth Limit (millions GSF)	Rating	Existing Total 1984	Total Architectural Resources Vulnerable by 1990	Total Architectural Resources Vulnerable by 2000				
				Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
1.5	NRP/CL (b)							
	Heritage A,B	422	17	29	27	27	24	29
	Heritage C	860	10	49	46	58	38	45
	NRP/CL, (b), Heritage A,B,C	1282	27	78	73	85	62	74
	TDR (a)	422	17	27	1	19	12	11
1.0	NRP/CL (b)							
	Heritage A,B	422	11	19	18	18	24	21
	Heritage C	860	7	32	31	38	38	33
	NRP/CL Heritage A,B,C	1282	18	51	48	56	62	55
	TDR (a)	422	11	18	1	13	12	8
0.5	NRP/CL(b)							
	Heritage A,B	422	6	9	9	9	13	11
	Heritage C	860	3	16	16	20	20	17
	NRP/CL (b) Heritage A,B,C	1282	9	26	25	29	33	27
	TDR (a)	422	6	9	-	7	6	4

(a) TDRs are Transferable Development Rights. For each Alternative and Growth Limit, the total number of vulnerable resources are shown, given the TDR and other preservation provisions of the Alternative.

(b) NRP/CL stands for National Register Property and/or City Landmark.

SOURCE: Roger Owen Boyer and Associates

TABLE VI.H.1.2: PERCENTAGES OF C-3 DISTRICT ARCHITECTURAL RESOURCES SUSCEPTIBLE TO CONVERSION BY 1990 AND 2000, ASSUMING GROWTH LIMITS EFFECTIVE IN 1984, WITH AND WITHOUT TDR (a)

Annual Growth Limit (millions GSF)	Rating	Existing Total 1984	Total Architectural Resources Vulnerable by 1990	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
1.5	NRP/CL							
	Heritage A,B	422	4	7	6	6	5	7
	Heritage C	860	1	5	5	6	4	5
	NRP/CL, Heritage A,B,C	1282	2	6	5	6	4	5
	TDR	422	4	6	-	4	2	2
1.0	NRP/CL							
	Heritage A,B	422	2	4	4	4	5	5
	Heritage C	860	1	3	3	4	4	3
	NRP/CL, Heritage A,B,C	1282	1	4	3	4	4	4
	TDR	422	2	4	-	3	2	1
0.5	NRP/CL							
	Heritage A,B	422	1	2	2	2	3	2
	Heritage C	860	-	1	1	2	2	1
	NRP/CL, Heritage A,B,C	1282	-	2	1	2	2	2
	TDR	422	1	2	-	1	1	-

(a) TDRs are Transferable Development Rights. For each Alternative and Growth Limit the total number of resources are shown given the TDR provisions of the Alternative.

(b) NRP/CL stands for National Register Property and/or City Landmark.

SOURCE: Roger Owen Boyer and Associates

VI. Mitigation Measures

- /2/ State Historical Building Code (Part 8, Title 24, California Administrative Code) permits exception from current code conformance of buildings designated for preservation by Federal/State or local agencies. This code is a permissive code to be enforced by local building officials, usually the Department of Public Works.
- /3/ The Marks Historical Rehabilitation Act of 1976 (Chapter 1345, California Legislative Service) allows issuance of tax-exempt bonds by the City for the purpose of historic building rehabilitation.
- /4/ The Mills Act (California Government Code, Sections 50280-50290) provides for historical property contracts between the City and owners of significant buildings.
- /5/ Each Alternative embodies some provision for TDRs as a mitigation measure (see Table III.B). Under all Alternatives, except Alternative One, they result in a substantial decrease in the number of vulnerable architectural resources with the use of TDRs.
- /6/ The TDR program must be directly linked to preservation goals and must be a workable concept. Elements of workability are defined by J.M. Sanger & Associates in Preservation Strategy for Downtown San Francisco.
- /7/ J.M. Sanger & Associates, Inc., Preservation Strategy for Downtown San Francisco
- /8/ Donald Hagman, Public Planning and Control of Urban Land Development. A more extended analysis of "zoning by special assessment-financed eminent domain" can be found in his Windfalls for Wipe-Outs.

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2. STREETSCAPE AND PEDESTRIAN AMENITIES

Many buildings built in the C-3 District in the last two decades have been built to their maximum development potential with little attention to their effects on the streetscape and pedestrian environment. In light of the additional quantities of development that are forecast in this report, regardless of Alternative, effective guidelines and requirements will be necessary to retain and enhance the quality of the downtown street environment. Mitigation measures that may assist in this purpose include the following:

- Revise the existing bonus system to eliminate misused and ineffective bonuses. Add bonuses to encourage important pedestrian amenities, and make certain street environment amenities mandatory. Elements identified in Table V.H.2.2 could provide a basis for such a bonus program.
- Establish a design review advisory board to review projects proposed in specified downtown districts. Such a board could make design recommendations to the City Planning Commission concerning projects under Commission review. The charter for such a board could limit the scope and focus of its review authority to design-related issues, including aspects of streetscape and pedestrian amenity. The composition of such a board might include planning commissioners, planning staff and design professionals.
- Include in any floor area bonus program a discretionary bonus for upgrading neighboring public right of ways. Such a bonus could award additional floor area for improvements recommended by planning staff, other City departments, the advisory board discussed above, or the Arts Commission, and approved by the City Planning Commission. Such a measure could make it economically advantageous for a project to contribute more to the streetscape and pedestrian environment than it otherwise could solely within the boundaries of the project site.

3. WIND, SUN AND SHADOW

Wind

As indicated in Section V. Impacts, adoption of development guidelines that promote buildings with irregular facades, setbacks at upper levels, cutouts and other configured shapes would reduce the impact of individual buildings. In general, lowered building heights would also reduce ground-level impacts by reducing the portion of the building exposed to the wind.

The continuation of the City requirement for wind tunnel tests on individual proposals, including studies of cumulative impacts where multiple buildings are proposed, would insure that site and design-specific factors influencing pedestrian wind impacts are addressed. The usefulness of wind tunnel studies would be improved with the development of uniform methodologies and standard criteria for determining design acceptabilities of winds in outdoor spaces. The statistical criteria for wind in plazas contained in Alternatives 2 and 4 are not useful in evaluating comfort levels; criteria related to temperature, wind and sunlight would be more useful. Wind standards in Alternative 5 are too vague to be used in a quantitative manner. The development of policies concerning the need for mitigation of adverse wind impacts found during wind tunnel studies would be useful. A refinement of the analysis of past wind tunnel studies contained in Appendix M would provide a screening method by which proposed buildings that are not likely to cause adverse wind impacts can be identified and exempted from wind tunnel study requirements.

Annual growth limits in themselves would not affect the design of buildings, and therefore would not directly change the ultimate wind impacts of future growth. Growth limits, however, would reduce the number of buildings built each year, and would therefore slow the rate at which the collective wind impacts of new buildings would occur.

Sun and Shadow

The extent and scope of requirements for protecting sunlight vary greatly among the five Alternatives. Because of the importance of sunlight in determining pedestrian comfort

VI. Mitigation Measures

and the usability of outdoor pedestrian amenities in San Francisco, specific policies and standards for preservation of sunlight are needed for:

- pedestrian areas,
- public plazas, parks and gallerias,
- solar collectors on adjacent buildings, and,
- on and offsite public amenities for which bonuses are to be granted.

Most of the above concerns are addressed within Alternatives 2, 4 and 5. The approach in these Alternatives is generally to specify a minimum percentage of area that is to be in sunlight during a specified time of day and portion of the year. If this type of standard is to be used, revisions to account for the complicating effects of Daylight Savings Time and the symmetry of the period of time about solar noon are needed, as is a standard method of calculation.

The enforcement of low heights along street frontages and the specification of cut-off angles are other means of preserving pedestrian-level sunlight. These approaches are used in Alternative 5 for 13 streets and several public plazas. These approaches could be applied in any future downtown growth management program.

Another potential method of preserving sunlight is the "Daylight Evaluation Technique" developed in Great Britain and recently modified for use in New York City. This type of control limits the amount of sky blocked from view from street level but does not specifically limit the amount of sunlight blocked. The methods to determine compliance with such controls is complex.

If policies and standards for sunlight protection are adopted, appropriate guidelines and methodologies for determining compliance are needed. A simple manual or computerized method now available to architects, environmental consultants, and city planners, would aid in evaluating impacts and developing sunlight mitigation.

4. SKYLINE IMAGE

Annual Growth Limits

Implementation of annual ceilings on new construction that would slow the rate of new development below the rate that would otherwise occur would correspondingly slow the rate at which skyline impacts would occur. Such a measure would not in itself affect the appearance of the structures that were built, but would reduce their apparent numbers at any given future time. The resulting reduction in visual effect may be approximately inferred from Table VI.H.4.1 for each Alternative.

Height, Floor Area and Use District Controls

A downtown growth management program could also influence the skyline by channeling larger and taller buildings into desired areas. Each Alternative would do this to some degree by varying use and height districts, and floor area ratios, throughout the C-3 District. Changes in the boundaries of these districts would affect the future skyline by determining the maximum heights of buildings in each portion of the C-3 District. The maximum heights of structures shown in Figures V.H.4.1 through V.H.4.6 could be altered by revising the controls embodied in the Alternatives.

Bulk, Shape and Materials Controls

Each Alternative also contains various design regulations and incentives that would affect the bulk and shape of the upper levels of C-3 District buildings. Alternatives 2 and 5 include required setbacks at upper levels; Alternative 5 also requires, and grants bonuses for, "sculpted" building tops, and encourages "harmonious" facade treatments.

Summary

Table VI.H.4.1 shows the principal measures for controlling skyline image, the visual effects each measure may be used to control, and the Alternatives that include each measure.

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**TABLE VI.H.4.1: SKYLINE IMAGE MITIGATION MEASURES AND IMPACTS
MITIGATED, BY ALTERNATIVE**

Mitigation Measures and Alternatives That Include Mitigation Measures					
	<u>Annual Growth Limits (0.5, 1.0 and 1.5 msf)</u>	<u>Height and Floor Area (FAR) Controls</u>	<u>Use District Revisions (indirectly determine maximum heights/ bulks)</u>	<u>Bulk controls (except setback controls)</u>	<u>Controls for shape and setbacks at upper levels</u>
"Benching" effect in building clusters	NA(b)	All	4,5	NA(b)	2,5
Uniformly rectilinear ("Square") building tops	4(a)	NA(b)	NA(b)	NA(b)	2,5
Reduced variation in sky/building interface; reduced sightlines through building clusters	4(a)	All	4,5	All	2,5
Blockage of views from existing buildings	4(a)	All	4,5	All	2,5
Conflicts with topographic forms and existing visual landmarks	4(a)	All	4,5	All	2,5

(a) The SFRG initiative (See Section II) contains a 1.0 million sq. ft. annual limit on new office construction in San Francisco.

(b) NA means Not Applicable; the measure does not mitigate the impact.

SOURCE: Roger Owen Boyer and Associates and Environmental Science Associates, Inc.

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VIII. GLOSSARY OF TERMS, ACRONYMS, AND ABBREVIATIONS

ABAG: Association of Bay Area Governments

Absorption: the occupancy of unoccupied building space by office, retail or other activity. In the case of hotels, absorption refers to attaining a certain year-round level of occupancy for new hotel rooms.

Actual Gross Square Foot: the total square-foot area of a building including areas omitted under Code Gross Square Feet. On the average, it was found that Actual Gross Square Feet were 1.12 x Code Gross Square Feet. This was found by averaging several existing buildings in the C-3 District. Parking area is not included in Actual Gross Square Feet in this analysis.

Approved: C-3 District development projects approved by the City Planning Commission as of mid-1982. These projects are to be available for occupancy in 1984. Details of these projects are listed at the end of the C-3 District Land Use Inventory on file at the Department of City Planning, 450 McAllister Street, Room 400.

Architectural Resources: a building rated, "A", "B", or "C" in the Heritage Survey, and/or "3", "4", or "5" in the Department of City Planning Survey.

Average Costs/Revenues: total costs/revenues divided by the total number of units of goods or services produced.

Baseline Forecasts: estimates of the change in C-3 District employment between 1981 and 2000, assuming long-term market conditions indicated by the development patterns established since the early 1960's. A baseline forecast was prepared for each business activity and for functions within office activities. The baseline forecast for each business activity and function established the long-term demand for space in the C-3 District, independently of the effects of the Alternatives.

Bonus: an award of the right to increase the amount of development of a site in exchange for the provision of certain features, such as plazas, etc.

Building Envelope: the spatial volume on a site in which a building may be built. The Building Envelope is determined by height and bulk limits, set-back requirements, etc.

Business Activity: a term used herein to identify employment groups according to the types of space they occupy and functions they perform. The most common means of identifying employment groups is the Standard Industrial Classification (SIC) system. This system does not allow some of the distinctions that are important in analyzing a relatively small and specialized economic area such as the C-3 District. For example, it would not provide the distinction between the office and industrial employment of manufacturing firms.

Btu: British Thermal Unit

Capacity: the maximum number of vehicles that can pass over a section of roadway or through an intersection during a given time period under prevailing roadway and traffic conditions. Also, the maximum number of passengers that can be transported over a given section of a transit line or group of lines in one direction during a given time period and prevailing traffic conditions.

Central Business District (CBD): used in this report as defined by the Bureau of the Census, Census of Retail Trade. This is the downtown retail area of a Standard Metropolitan Statistical Area (SMSA) central city. The CBD is defined by existing census tract boundaries. For San Francisco it covers Census Tracts 115, 117, 121, 123, 124, 125, 176.01 and 176.02.

Code Gross Floor Area: total floor area of a building as defined under Floor Area, Gross, Section 102.8, San Francisco Planning Code, 1979 Edition, Part II, Chapter II of the San Francisco Municipal Code.

Compound Growth Rate: same as compound interest used in financial calculations. Measures the percentage change in amount between two points in time, and expresses the change as a periodic rate in which the change at the end of each period is added to the immediately preceding base amount. It is not simply the percentage change between two points divided by the number of periods (usually years).

Constant Dollars: from a given year, future (or past) dollar amounts are expressed in terms of their value in the benchmark year's dollars. This measurement accounts for the effects of inflation so that dollar amounts in different years can be compared.

Conversion: Two definitions are used in this report: (1) in Land Use and Real Estate Development, conversion is a change in the use of an existing buildings, with or without major physical changes to the structure. Usually industrial, retail or residential space is converted to office space; (2) in Architectural Resources, conversion is the demolition or substantial alteration of an architectural resource.

CBP: County Business Patterns (U.S. Department of Commerce Publication)

DCP: Department of City Planning

Density of Development: the ratio of total gross square footage of building space to total land area in a subarea. It is expressed as an overall Floor Ratio Area (FAR).

Destination: the point or zone in which a trip ends (see Origin).

Down-zoning: reducing the allowable density or diversity (of new development in an area through controls on building size and/or the uses permitted.

EDD: Employment Development Department (State of California)

Employment Density: an indicator of the relative number of employees in a given amount of space measured in terms of of building space per employee.

FAR: Floor Area Ratio

FIRE: Finance, Insurance, and Real Estate

Floor Area Ratio (FAR): used in two different contexts in this EIR. (1) As a measure of the overall density of development in C-3 District subareas, it is defined as the total gross square footage of building space divided by the total gross square footage of land area. (2) As a measure of the size of individual buildings, it is defined in the San Francisco City Planning Code, Section 102.10 as "the ratio of the gross floor area of all the buildings on a lot to the area of the lot."

Gross Square Feet: total floor area as measured by the exterior dimensions of the building or space within a building. Includes common areas (hallway, lobby, etc.), stairwells, mechanical facilities, or storage space not occupied by employees.

Kwh: Kilowatt hour

Land Use: type of activity on a given parcel of land; e.g., office, residential, industrial, etc.

Level of Service: a measure of the effectiveness of a roadway or intersection in terms of operating conditions, usually associated with a specific volume-to-capacity ratio. (See Volume-to-Capacity ratio.)

Marginal Costs/Revenues: the incremental change in costs/revenues associated with additional production of goods or services over a specified time period.

Mean: a statistical measure obtained by adding all values from a group of observations and dividing by the number of observations. It is the average value of a variable across all observations. The mean is sensitive to extreme values in the distribution of the variable.

Median: a statistical measure used, as is the mean, to indicate the middle of a distribution. The median is the middle point of a distribution: the value that is larger than half of the terms and smaller than the other half of the terms. For a given distribution, the median and the mean may not be equal.

Modal Split: the proportion or percentage of total travel that uses each of various specified modes of transportation. (See Person-trips and Modes.)

Mode: a means or method of transportation such as automobile, transit, walking, and others. These categories can also be separated into subcategories such as Drive Alone, Carpool, Vanpool (for automobile), and specific transit usage (BART, Muni, etc.).

National Historic Landmark: see Appendix E.

National Register of Historic Places: see Appendix E.

National Register Property: a building or feature listed on the National Register of Historic Places.

VIII. Glossary of Terms

Net Rentable Area: building area leased to tenants. It is current practice to lease the Actual Gross Square Footage less the area of the elevator shafts. All other areas are included in the net area, such as outside walls, elevator lobbies, toilets, stairways and duct shafts. Building efficiency is the net rentable area divided by the actual gross area.

Non-work Travel: all trips excluding commute trips to and from work. (See Travel Purpose and Work Travel.)

Office Space: building space occupied by office activities. This could be space originally built as office space or space converted from some other use such as retail or industrial.

Origin: the location of the beginning of a trip or the zone in which a trip begins.

Peak Hour: the hour during which the maximum amount of travel occurs; may be specified as the a.m. (or morning) peak hour or the p.m. (or afternoon or evening) peak hour.

Pedestrian Flow Regime: One of five categories of pedestrian density varying from Open Flow with no restrictions, to Unimpeded, then Impeded, then Constrained, then Congested, and finally Jammed with only shuffling movement.

Person-Trip: a one-way movement of a person between two points for a specific purpose.

Person Trip-End (PTE): the origin or destination of a person trip. Each person trip has two ends. Two person trip-ends define one person-trip if the origin and destination are both in the study area.

Pipeline: C-3 District development projects that are either approved or under review by the Department of City Planning, as of mid-1982, and the mix of uses and amount of development approved for the Yerba Buena Center Redevelopment Project Area. Details of these projects are listed at the end of the C-3 District Land Use Inventory on file at the Department of City Planning, 450 McAllister Street, Room 400.

Primary and Secondary Office: two types of office employment were defined for the employment analysis on the basis of differences in function. Primary office activities include executive, administrative, and information processing functions of the following types of firms: manufacturing and mining, finance, insurance and real estate, business services, transportation, communications, and utilities, as well as government. Secondary office activities include the sales and customer service functions of wholesale and manufacturing businesses, retail services, and branch banks. These types of office activity have different characteristics, in terms of their use of space, their ability to pay for office space, and their preferences for types of space and locations.

Rent Areas: geographic areas (see Figure IV.B.1) defined specifically for the Downtown EIR real estate analysis. The boundaries were drawn, after discussions with knowledgeable realtors and developers, to indicate general distinctions in the level of office rents among different locations in the C-3 District.

Residence Patterns: descriptions of the distribution of C-3 District employees by their locations of residence (counties, commute corridors, San Francisco planning areas).

Ridership (Transit): the number of persons using a transit system or a portion of the system within a given time period.

Screenline: an imaginary line that divides a study area into parts and along which traffic or passenger counts can be conducted.

SIC: Standard industrial classification

Spaces in Office Buildings: all space within an office structure. This could include space occupied by retail stores, restaurants and branch banks. In an office building with a mix of uses, the office space is less than the total space in the office building.

SPUR: San Francisco Planning and Urban Research Association

Standard Industrial Classification (SIC): developed by the Office of Management and Budget, the Standard Industrial Classification system identifies establishments and other types of units (central administrative offices, auxiliary units) by the types of economic activity in which they are engaged. There are ten major divisions to the classification system, and these are further subdivided based on the principal products distributed or services rendered. The SIC system is a standard format used by both business and government in collecting and reporting data on economic activity.

TCU: Transportation, Communications, and Utilities

TDA: Transportation Development Act

Transfer of Development Rights: removing the right to develop land to a specified density from one site to another.

TDR: Transferable Development Right

Travel Demand Analysis: Study to determine the number of trips that would be expected to travel to and from a certain location given a specified land use. The study generally includes determining the modal split, routes expected to be used, and the total travel (vehicular, pedestrian, or transit) that would be expected on each route. (See Trip Generation, Trip Assignment, Trip Distribution.)

Travel Purpose: specific categories of trips, generally divided into work or other (shopping, school, recreational, etc.).

Trip Assignments: a process by which trips described by mode, purpose, origin, destination, and time of day are allocated among the available paths or routes.

Trip Distribution: the process of estimating movement or the total number of trips or percentage of trips expected to travel between zones, areas or specific locations.

Trip Generation: the determination of the number of trips that have an origin or destination at a specified location or area.

Trip Purpose: (See Travel Purpose.)

Trip Rate: the number of trips or trip-ends expected to be generated by a specified land use, per employee or other given measure such as square feet, acre, etc.

Under Construction: C-3 District development projects under construction as of mid-1982. These projects are assumed to be completed in or before 1984 and are incorporated in the 1984 land use and real estate development setting. Details of these projects are listed at the end of the C-3 District Land Use Inventory on file at the Department of City Planning, 450 McAllister Street, Room 400.

Under Formal Review: C-3 District development projects in various stages of the review process, but not yet approved (or withdrawn) as of mid-1982. These projects are assumed not to be completed before 1984; they are part of the pipeline. Details of these projects are listed at the end of the C-3 District Land Use Inventory on file at the Department of City Planning, 450 McAllister Street, Room 400.

Upgrading: investment in existing space. Possible consequences are changes of tenants, types of merchandising, the physical appearance of the space, rents, and the number of workers employed in a given amount of space. Changes occur without net additions of space or changes in use.

Vehicle Occupancy: the number of persons in a vehicle, including the driver.

Vehicle Trip-Ends (VTE): The origin or destination of a vehicle trip. Each vehicle trip has two ends. In a large study area, two vehicle-trip ends define one vehicle-trip if the origin and destination are both in the study area.

Visitor Activity: refers to the spending for lodging, food, retail goods and services, and transportation attributable to tourists and day visitors in San Francisco, who have travelled from outside the Bay Area region.

Volume-to-Capacity Ratio: the total volume on a roadway, or through an intersection, divided by the capacity. This ratio gives an indication of the operating conditions along a roadway or at an intersection. (See Level of Service.)

Work Travel: commute trips to and from work. (See Non-work Travel and Travel Purpose.)

Yerba Buena Center Projects: C-3 District development projects described in the approved Yerba Buena Center Redevelopment Area Plan, Second Supplement. These projects are assumed not to be constructed before 1984; they are part of the pipeline. Details of these projects are listed at the end of the C-3 District Land Use Inventory on file at the Department of City Planning, 450 McAllister Street, Room 400.

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